"REBIRTH"

mathNEWS was conceived Jan 17, 1973 at a "math newspaper organizational meeting". Born a few days later, in the wee hours of the morning on Jan 23rd, with the help of (3*2) eager hands. Over the past term we published 10 issues at 1000 copies. Was it worth all those many copies, you ask. We wondered that, too, and we did something about it. The "all important" questionaire was compiled and printed. Most important it was distributed and we got answers. The worst reply was "I don't think that mathNEWS is a worthwhile project but I like it anyway." That was all last term. Now we want to produce Vol. 2. Since most of you weren't on campus last term you won't know anything about us. Hopefully we will be a fun-loving, "hardworking" group of "fools" as last term. We will always be ready and willing to accept new fresh fools to our non-titled ranks. Our only reward will be to have our names in print and all the coffee we can drink (ie. our bladders can hold).

One releif will be there will only be 1 chapter of W.M.C.F.D. published this summer. Our survey showed that this feature serial was the pet hatred of all our articles. For your information W.M.C.F.D. stands for Water Mellon Caully Flower Dough, an inspirational novel with illustrations in 9 chapters, written by Gerhardt von Schplumfptk. To familiarize you with our contents on the following pages here is a list of (hopefully) weekly items.

1) GRIDWORD--a crossword puzzle mainly for a math oriented mind.
2) THE PHANTOM REPORTS--a smutty report about those nasty machines and their cold warfare.
3) THIS WEEK'S THEOREM--an impossible proof proven possible.
4) MATHLETICS--a report on the athletic mathie group sports.
5) CLASSIFIED--"Censored."
6) CARTOON--if and only if some brave talented soul comes up with one.
7) FEEDBACK--or letters to the editor.

This paper does not take any responsibility that it is #1, the best, or the worst. Infact, it does not take any opinion on it's quality, but we will admit we are a crazy bunch of writers out for a night of fun.

Come out some Monday night at 7:00 to room 3011 on June 11 or 25, July 9 or 23, or Aug 6 and join in our madness. Once you have been out you'll see your name in print and have a taste of how not to run a paper.

We hope to distribute the paper on the following Thursday . Last term the paper came out on Friday, but have you noticed that weekends in the summer start on Thursday.....

the anniversary volume:

MATH FACULTY PUBLICATION DODGES BANKRUPTCY FOR 50 YEARS

That's right, folks. After fifty long years, the mathNEWS writers' room has finally hit rock bottom and run out of ideas. In lieu of our usual stream of revolutionary, world-changing content, we're doing a term-long recap episode of mathNEWS. That article above is from Volume 2, Issue 1 of mathNEWS, published in spring of 1973.

Now, to celebrate our frankly miraculous subsistence for 50 years (yes, older than Imprint),

we'll be interviewing past editors and writers for our mathASKS column each issue this term. Each issue will also look like one (or more) of the issues from each decade. We had to dig deep for this one: we spent months combing through the archives and tracking down past editors...

This issue covers 1973 to 1982. Enjoy!

evaluatED

mathASKS *151.1* — Part One
Featuring Steve Treadwell, mathNEWS co-founder

"What program were you in? What drew you to it?"

I was in the math and computer science co-op program and started in the fall of '69. I had found out about this on a school trip to Waterloo when I was in high school. It was organised on a Saturday for a dozen or so students. The school arranged for a bus to take us to Waterloo for the day with the promise that we would be shown how to program.

Now let me just say how incredible that statement was at that time. Most people had never seen a computer, or 'electronic brain' as many thought of them. The idea that you could be taught to program one was just out of this world. None of us even knew what a computer program looked like. So this was an amazing opportunity.

I always think that whoever at Waterloo conjured up that day was brilliant. Because to take young people who had no experience whatsoever and teach them to do something so incredibly advanced in just one day is quite a trick. I've often told this story as it's a lesson in how to teach.

When we arrived we didn't get a lecture on computing or lessons on how to program or binary arithmetic. They took us into a room and handed each of us a deck of about a dozen punched cards (that's right, this was a LONG time ago). So we were told to go into the next room and line up along a counter where an operator took them and fed them into a card reader before handing them back. We then moved along the counter to a printer that was spewing out fanfold paper where another operator tore off the sheets and handed our output to us. We then went back into the room where the printout was explained: the part of the top was the program; the rest of it was the output from the program. It was a WATFOR program with DO-loop that printed the numbers 1 to 10. They explained what each statement did, how the loop worked and how it printed. The first thing they asked us to do was change the program to print the numbers from 1 to 20. So we went into the key punch room, punched up a new DO statement card with the 10 replaced by 20 and went back into the lineup to print it again. So within 30 minutes of arriving we were programming! And all afternoon we produced more and more sophisticated programs. By the end of the day I had the bug that would drive my life and career.

"What involvement did you have with mathNEWS?"

Before I was MathSoc president, I was vice president of the Feds under Andrew Telegdi. Don't ask me how I got that position - I just can't remember. When I became MathSoc president I remember chatting to John Peebles about starting a newsletter. It sort of felt like a good thing to do and initially started as a vehicle for MathSoc to connect to the mathies, a voice piece. We thought it could echo mathies' views and ideas back to them and help build a very strong math identity.

Us mathies thought we were a privileged bunch of people, not privileged as in superior, privileged as in lucky. We were at one of the few institutions that had a math faculty and where math was important. Math was seen as a discipline in its own right not just to support other sciences or engineering. We were incredibly proud of this. And there were lots of us! So rather than just being represented by the Feds we felt we should have our own rag on campus to reinforce the math community. We also thought it could be fun using math in-jokes that would strengthen that identity.

Side story here. I thought I was pretty good at math: I was the top math student in my high school in Toronto and in the 99+ percentile in Ontario SAT scores. So I arrived at Waterloo thinking I definitely deserved to be there. That is until my first morning in the Village *[ed. note: V1]* when I went down to breakfast and sat with a group of math freshers who were having a heated math debate that was way over my head! I didn't even understand the topic! (Who needs constructible numbers anyway?) That put me in my place!

"Thoughts on Feds/WUSA, MathSoc, and other forms of student government generally?"

Student organisations can form a catalyst to bring students together, and so are important at many levels: *Feds [ed. note: WUSA]*, MathSoc, and clubs. These all help to form communities of students that can support each other and form bonds.

In addition, students always need to have an organisation that looks out for their interests, supports them and ensures that their input is heard at all levels of university life. It brings them together and forms a community of like-minded people. That's why not only are the Feds and MathSoc important, but also why clubs are important.
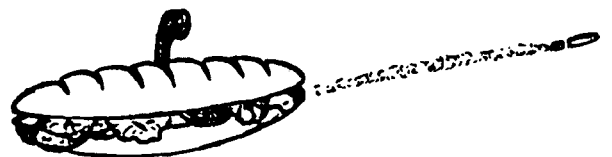
<u>"What inspired the creation of mathNEWS? Any prior math publications (and if so, what made mathNEWS stick)? Why do you think mathNEWS lasted?"</u>

You know, I can't remember why we started it now, other than as I mentioned earlier, to give mathies a voice and enhance the sense of a math identity. I know there were some concerns at the time that we would not get enough mathies interested to write articles. Some thought we were mad to even attempt it: I mean, you wouldn't expect mathies to be good at writing articles would you? Isn't that for English students? Also there was a concern that once everyone got their pet issues off their chest in the first few editions, interest would fade. But the opposite was true, the more we wrote the more issues emerged that we wanted to write about!

I had left Waterloo less than two years after mathNEWS started so I'm super impressed that generation after generation of math students have kept it going! What an incredible thing to do, and of course, it's now an institution. As to why it has kept going for so long it must be because there is a need.

<u>"How did you feel about Chevron/Imprint, Iron Warrior, and other newspapers on campus around your time?"</u>

The Chevron in particular was very different to what we were doing, and had a completely different remit in terms of reflecting campus-wide issues. Meanwhile here we were photocopying pages that were pasted together (real cut-and-paste) while the Chevron was on a whole different level: printed by a printing press on decent paper with photographs, sketches and a professional layout. The Chevron was highly political at the time (which led to lots of infighting), and that's not the direction we wanted to go in. Ours was far more of a co-opera-tive venture with a lot of camaraderie. I think we can feel sort of smug that mathNEWS outlasted The Chevron!

<u>"Describe your average production night."</u>

Long! We would usually start quite late and then go off to different parts of the building to write our articles (mainly so we could concentrate). We'd meet up after a couple of hours and read each other's articles, make suggestions, go off again, then finally meet up to put it together.

<u>"What kind of articles did you write for mathNEWS?"</u>

I can't remember now. I'm sure that I felt that they were important at the time!

<u>"What's the most memorable and/or scandalous article published in your time at mathNEWS? Anything you were personally proud of?"</u>

I was just proud that we could launch it and keep it going while I was there. We didn't do scandals, more's the pity!

<u>"In mathNEWS, we've seen a huge mix of serious and silly articles, with people writing about everything from dealing with depression to jokes about King Charles needing to leave a gaming team to bodily fluids to trauma. Does this wide breadth of content match mathNEWS when you were around? Are you surprised by what it's like now?"</u>

That sounds very creative--you've done a much better job than we did! I am a bit surprised that it has expanded to encompass such a wide range of topics. Great work guys!

<u>"Tell us about a common mathNEWS meme from your time."</u>

Well one meme had to do with computers. To get the context, the math building was a temple to computing. In the centre was a huge two story glass atrium and sitting in the centre of the atrium was the holy of holies, an IBM 360/95 computer, I believe the most powerful made by IBM at the time (it had 5MB of memory!!!). Big cabinets, whirring tape drives and lots of flashing lights. Incredibly impressive at the time. When it came to computing there was only one company: IBM, and the word "IBM" was used interchangeably with "computer". So here was Waterloo shouting its arrival in the computer world with this top of the range IBM.

So imagine the reaction when it was proposed to buy Honeywell computers. Lots of people, staff and students alike, thought that this was tragic, and would weaken Waterloo's computing image! There were strong feelings about this at the time, and the arguments went on for a long time. (See what I said above about articles seeming important at the time!) In fact this appeared in the first edition of mathNEWS.

<u>"Did mathNEWS have its own office? Where (in relation to some landmark like the CnD shop/ lounge)? What was it like?"</u>

Are you saying you have your own office now? When I was there mathNEWS didn't have its own office but we did use another office and I don't think it was MathSoc.

3

<u>"Have you kept track of mathNEWS at all since finishing university?"</u>

When I left university it was before the internet or email. No-one was going to post a copy to me! Also once you leave university the articles aren't as meaningful as you lose the context.

<u>"Is what you're doing today what you expected when you finished university? How has life been for you after university?"</u>

After graduating in 1974 I started a master's in computer science at Waterloo, but soon after a contact at Waterloo led me to take up an offer of a PhD place at University College London. That was in 1975. I was told that I was to be part of a large international research project on computer communications. Turned out this was the ARPANET, and over the next five years I worked on the IP protocols as part of a large team. This team would meet up every 3 months in various research institutions in the US: MIT, Standford, Xerox Parc, etc. Due to my contacts there after I received my PhD in 1980, I worked at a start-up in Silicon Valley. Six years later I moved back to the UK and I've run a series of IT companies ever since, the latest being in the health sector.

So interesting how a contact at Waterloo led me to a PhD in London then to a Silicon Valley start-up. So my message is: if opportunities arise, take them!

Now, "Is what you're doing today what you expected when you finished university?" In a word, no. I thought I would go into scientific computing. But life has been far more exciting than I would have imagined.

<u>"How do you look back on your time in mathNEWS?"</u>

I learned a lot from mathNEWS in terms of cooperating with people for the greater good. It also improved my writing! I'm a bit of a last-minute person, so being up against it to crank out a few articles by a deadline turned out to be a useful skill later in life, especially when writing papers for publication.

<u>"In retrospect, do you think past-you would have imagined that mathNEWS would live to see its 50th anniversary? Do you think it will live to see its 100th? Would you want to be contacted for mathNEWS' 100th anniversary?"</u>

I would never have guessed that it would survive that long. That is incredible. I'm 73 now so perhaps I'm lucky to reach the 50th milestone! As for the 100th anniversary, that's a very kind thought, thank you! But I would think the probability of me being around for that are less than $((e^{(i*pi)})+2)/10^6$.

Steve Treadwell

Thanks Steve! —ed

Blotto!

Time to play some Blotto! (Colonel) Blotto is a classic game involving strategy, intrigue, suspense, and a lot of dumb luck. To play, you must allocate 100 soldiers across 10 castles, conveniently numbered as castle 1, 2, ..., 10. After everyone has distributed their soldiers, player's allocations are pitted against each other 1v1 in a round robin format. In each round, the number of soldiers on each castle is compared: if player A has more soldiers on castle x than player B, player A wins x points. If they are tied, each player wins x/2 points. After all is said and done, whoever won the most points from these ten castles wins one Blott (note this is for each round, so it is possible for someone to win n-1 Blotts if there are n participants). If the players tie, each gets 0.5 Blotts. The ultimate goal is to obtain as many Blotts as possible, winning the extreme jealousy of your peers.

For example, suppose the following allocations go head-to-head:

1:	2:	3:	4:	5:	6:	7:	8:	9:	10:
10	10	10	10	10	10	10	10	10	10
0	0	0	0	0	20	20	20	20	20

Player 2 wins a sum of 40 points from the last 5 castles, while Player 1 wins only 15 points from the first 5 castles. So in this scenario, Player 2 wins one Blott.

Without modifications, this would get boring after round 1. So in future rounds, there will be special modifiers that make things a little funkier. Stay tuned!

Submit your soldier allocation and your preferred name to **sherpnews@gmail.com** before February 5 to participate. In the next issue all submissions and a leaderboard will be published.

sherp

MathSoc Sez: You are MathSoc

We live in a (math) society and *you should give a shit.*

Let's be honest: most of you, at best, skim these for mentions of free bubble tea (there's some on the evening of the 27th, at Boba and board games), then ignore everything else. I could talk about the advocacy work we've done so far, and what we have planned--but that wouldn't matter, because first, <u>I need to convince you to give a shit</u>.

I wish it weren't that way, that people just inherently cared about MathSoc, but much of what we do *seems* divorced from the daily lives of math students. Everyone has a finite budget of time, a limit to how many things you can care about, and I don't blame you if MathSoc hasn't been one of those so far. The thing is, MathSoc is effective *precisely* because it represents a large number of students, because people are committed and involved. This is a pattern of collective movements. As awful and unfair as it is, if your boss underpays you and demands too much, there's almost nothing you can do short of quitting, which is rarely an option for the people most exploited; but, a union can negotiate for higher wages, because even though one worker can't make a difference, all of them together can.

In a similar vein, if a professor has an unfair course policy, if you were getting harassed, if you wanted money for a cool event and MathSoc *didn't* exist, dealing with any that would be hard. Faculty absolutely cares about us, but they do not and *cannot* have us as their first priority, because they have complicated politics, research funding, and so many other things to navigate. They can't listen to *every* demand made of them, and so unfortunately, the voices of individual students get overlooked. People get grades they don't deserve, course policies are bullshit, professors are dicks to students, and relatively little happens, because the concerns of individual students sometimes *have* to be overlooked.

This is where MathSoc comes in. Now, I'd like to be very clear; the people involved with MathSoc are your representatives, but MathSoc only works because of you. MathSoc executives don't get a magic button, our individual issues with courses don't count for more. Instead, we have the ability to sit in on meetings where people who influence university policy listen to us and act based on what we say--I've attended a meeting about the M4 construction and I'm meeting with the dean this Friday, and there are *many more* coming up. The reason they listen to us is because, when we speak, we don't speak for ourselves, we speak for everyone. One undergrad can be ignored, but 8000 can't be, no matter how inconvenient is for

faculty. They tell us when there are issues, they tell us what requires advocacy, they tell us about the bullshit they go through. And, much like the union, because we speak as many and not one, we get money for events and we change university policy, one step at a time.

This, crucially, hinges on you. This relies on you to tell us when there are problems. This requires you show up to events and have fun, to make good use of the money we spent, to attend the review sessions we spend hours organizing, to participate in clubs, or to do anything else that engages you. Collective bargaining only works when the representatives have the weight of the collective behind them--and so, in order to change things, your voice is needed. We are not MathSoc, we are simply the representatives. MathSoc is the community of undergrads here, given a voice, given the power to make changes, to do more than what all of us could do individually. MathSoc is <u>you</u>.

The converse of this is that, without your voice, we stop functioning. If you're reading this and you're dealing with anything--relating to degree requirements, difficulties with a course or instructor, issues with policy, come talk to us. If you're lonely, go to clubs, go write for mathNEWS, go to our board game nights.

Your time is the most precious resource that you have, and if you ever want to change anything about your university life, we are the most efficient way to spend that time.

The whole will always have more power than the part; but the whole cannot exist without the part. We are your mouthpiece, but we need to know what to say; we support, but we need you to direct us; MathSoc represents you, but *you are MathSoc.*

Nicky (MathSoc President)

Reading recommendations

Been trying to read more, give me some reading recommendations ty. **bit.ly/3C32Y09**

warrior1rules

PMAMC&OC Weekend Update

Aaaand we're back. That's right, the Pure Math, Applied Math, and Combinatorics & Optimization Club has scraped by for another term.

What? You're not a member yet? Well, look who's missing out! (You.) You'd better change your mind once you see what's on the agenda for this next month. Here, let me show you:

Prof Talks

We host three talks a term. One for each of pure math, applied math, and C&O, each given by a professor in that subject that we can manage to rope in. This term we're holding FOUR (4) talks. We actually held the last one last week, for pure math: Professor Kevin Hare gave an excellent talk on the Cantor Set, and sundry breakfast foods (cereal and milk, featuring Creeper Crunch) were enjoyed by all in attendance.

I don't know when the next prof talk will be, but it'll be soon! Hang around the club office or read this column in another two weeks for updates...

24-hour SASMS

Each term, the Club hosts a series of Short Attention Span Math Seminars (SASMS). Usually, this includes two hours of talks plus dinner. This term... well...

This term, it's twenty four (24) hours. No, I'm not joking. That's a full day of talks, plays, comedy routines, and whatever else people want to present in the name of the Club. It'll be February 10th to February 11th, 3 PM to 3 PM. Location TBD. As readers of mathNEWS, you get these details first-- er, second-- er, third. It's better than fourth though, ain't it!

If you're interested in giving a talk or other feature event (between 30 minutes and an hour), come see a Club exec (we'll talk you into it).

The Club Office (Sacred)

The Club is headquartered in MC 3033. Come make the customary pilgrimage to witness the sacred blackboard during irregular service hours: you're personally invited (that's right, I pencilled *your* name into the guest book ahead of time). Also come pay your termly $2 membership fee to get food at events and unacceptably low prices on our stock of pop!

That's all for this week. Next issue, myself or our esteemed Vice President and Emperor of Propaganda will fill you in on what more you'll be missing out on if you've still somehow resisted the urge to join the Collective.

Evan Girardin
President, PMAMC&OC

PMC Office Expansion Proposals

Logistics

* Exec elevator
* Court room
* Pneumatic tunnel
* Pigeons
* Multiple high-APM-resilient mice

Entertainment

* A really big aquarium
* Mini pinball machine
* *Mortal Kombat*
* Mortal combat
* A really small aquarium
* *Let's Go Fishin' Game by Pressman--The Original Fast-Action Fishing Game!* Amazon's Choice for "fishing game for kids"

Sustenance

* *Kraft Dinner KD Boost Cotton Candy Seasoning Packet,* Pink, 25 g (Pack of 1)
* T&T seafood counter
* Hotpot station
* Korean BBQ table grill

Coming Soon

* 24/7 door sensors

Already Here

* Spoon

Olive pizza
Olive pizza

Olive pizza

Two Amazing Pizzas Won on This Anniversary Issue Prod Night

Hey all,

I once wrote an early eulogy for the "Oops All Olives" pizza (olive oil base, double black olives, green olives, no cheese). While the formulation of the pizza has been changed due to mathNEWS wage cutbacks (olive oil base, double black olives, green olives, no cheese), the spirit has nonetheless remained, and I have continued to advocate for this pizza and other pizzas in general, despite thinking my cause doomed.

Oh, what happy day, how wrong I was! Oops All Olives has received enough popularity on this blessed and holy 50th anniversary issue that we have truly made history of ordering a truly eccentric pizza. I will surely bless the mathNEWS writers' palates with culinary ecstasy. They will know no other topping, only the olive, and its true value.

Moreover, another historic pizza win! A friend of mine, in the meantime, was advocating for the Oops All Tomato, and it also garnered enough love and adoration to be purchased by the mathNEWS editor team. What a joyous occassion! Truly the tomatoes will be bountiful both on the pizza, and later, in writers' stomachs. Another historic win on a historic mathNEWS day.

Now, I must bring up a plight of the writers. Unfortunately, despite getting plenty of votes, none pizza with left beef was struck down quickly, like a knife across the throat! It never stood a chance against those ruthless editors. The official statement they gave was that the pizza votes had succumbed to untimely circumstances, integer overflow error they say. Lies, we say! We must see candour from the editors, and we must see to it that none pizza with left beef shines through to the light of day!

One other notable minor victory today were three pizzas in tandem: cheese, double cheese, and triple cheese. The wishes of the writers was simply that of an earnest, passionate love for cheese, unending and voracious! However, to be denied once again, a "system error" had occurred, and the double cheese pizza had been supplanted with a pretender from what we can only be assume to be a conspirator. While we experienced some major victories today, the Will of the Pizzle has now been trampled upon, but one day we may rise to the task and claim the pizza we earned as our mathNEWS-given right.

Xx_420SonicFan69_xX

(This is all in good fun; I love the editors and they do a lot for us. Thank you, really, we writers appreciate you, and here's to another 50 years!)

Fifty Years Ago

It all began with disorg
And thus begun the show
This thing we call mathNEWS first lived
Fifty years ago.

What was running through their minds,
Could they even know?
Of what things they'd set in motion
Oh so long ago?

All those early writers,
Were they just like you and me?
Did they have worries and fears, hopes and dreams?
Did they eat Lazeez?

I wish I had a time machine
To take me to '73
So I could go to the first prod night
Held where else but grey MC?

I'd see what writers wrote about
Smallpox? Vietnam? Geese?
And when the night was over
Would we eat pizza, free?

mathNEWS has grown and changed a lot
Since its first "World, Hello"
Now there's mastHEADS! profQUOTES! blackBOXES!
And N Things lists also.

What it was like back then
I guess I'll never know
But this is still far from the end --
We have fifty years to go!

Finchey

7

Ever wanted to make a video game?

Have you ever been interested in trying to make a video game? Whether your interest is programming, art, writing, music, audio, design, or any combination of those things, we'd love for you to stop by this term's Game Jam, hosted by the UW Games Institute and the Game Development Club, from February 3rd to 5th.

What is a Game Jam, you ask? It's a weekend-long game dev marathon where you work by yourself or with a group to complete some kind of playable experience based on a theme. (If you've ever done a hackathon, it's a very similar idea.) You get the whole game dev experience--starting with an idea, working to refine it, seeing how it plays with real people, and polishing it up as you barrel towards the finish line--all in just 48-ish hours.

We're doing it as part of the Global Game Jam, one of the largest game jams in the world, with literally thousands of participants in every continent. This is one of the biggest events of the year in the game dev community, and it's always a lot of fun.

You don't need *any* experience to come out and have a good time. We host tutorials and presentations to teach you how to use game dev tools like Unity and Godot, we have experienced mentors on hand who can answer any questions you have, and we do extensive team building sessions so you can find people who are also trying to build their skillset.

The overarching attitude at the jam is that everyone wants each other to succeed. The best way to learn to do something is to do it- so if this is something you want to learn, there's no better opportunity than this.

Also, if you can't commit to the entire weekend, that's okay too! GGJ is an asynchronous event happening around the world at different times. Technically it starts on January 30th when they release the theme and you can work asynchronously.

The schedule so far is:

* Jan 30: <u>Start of the Jam!</u> Theme is announced by GGJ, Asynchronous Work can begin
* Jan 31: Asynchronous work
* Feb 1: Asynchronous work
* Feb 2: <u>Team Building from 5:30pm--6:50pm</u> (QNC 2501/2502), Asynchronous Work
* Feb 3: <u>In-Person Work from 5:00pm--11:00pm</u> (QNC 2501/2502), Asynchronous Work
* Feb 4: <u>In-Person Work from 8:00am--11:00pm</u> (QNC 2501/2502), Asynchronous Work
* Feb 5: <u>Last Day of the Jam!</u> <u>In-Person Work from 8:00pm--5:00pm</u> (QNC 2501/2502), Asynchronous Work

Game Jams can be hectic and chaotic, but I think they are an immense amount of fun. If this interests you at all, you should try it!

Oh, and while I have your attention...

If you want to engage your game dev skills more, prepare for the jam, or just meet other people interested in this hobby, the University of Waterloo Game Development Club might be for you. We meet every Thursday evening in the Games Institute space at EC1, at the corner of Columbia and Phillip.

We come together to show off things we've been working on, hear talk on various aspects of game design or development, give instructional demos, or do events like our game jam. Like the jam, we're super welcoming to newcomers and people of any discipline--all you need to be qualified to show up is an interest in game development.

For more information about the club and the Game Jam, you can follow us on Instagram at @uwgamedev, or join our Discord server (you can find it on the UWaterloo Discord Student Hub).

We hope to see you there!

UW Game Dev Club

N current fixations
things that define my personality at this time for better or for worse

* Starting sentences with "When I was in Norway..."
* The band Peach Pit
* Hating French accents
* Innertube waterpolo intramurals (join!)
* "Act your wage" as a motto for co-op
* Fixing my sleep schedule
* Reading more
* Trying to decide on a career path
* Talking about going skiing but never following through

peacelovemath

bug review
a cautionary tale

When I was 6 years old, my great uncle came to visit from the states. He was a jovial fellow (albeit a little strange) whose antics fascinated a young impressionable me to no end. The day before he left we were playing outside in the yard when a little green bug caught his attention. He squinted through his heavy glasses and bent down to pick it up.

"snackimal, do you know what this is?"

I shook my head shamefully.

"It's an aphid. Do you know what we do with these in the states?"

I shook my head again.

He popped it in his mouth and swallowed it whole.

It seems to be a common belief among Christian parents that children start off pure and innocent, and gradually succumb to the evils of society. That couldn't be further than the truth. Kids are born with absolutely no concept of good and evil and will do some pretty fucked up shit if you let them.

Anyway, I ate bugs, okay? I ate bugs. Fuck you.

Here's your bug review you sick fuck.

* Aphids: Surprisingly tasty. 8/10
* Ants: Incredibly disappointing. The shells are pretty crunchy as you'd imagine, but there's this horrible bitter flavour. I spent about a week of recess finding anthills and trying all the thorax/abdomen colour combos, but they all tasted the same in the end. 2/10
* Spiders: I've only eaten daddy long legs and a couple of the smaller white ones, so I can't give a comprehensive review. These guys tasted kinda normal. 5/10
* Worms: Do not attempt unprepared. They have 5 hearts and all of the pieces will wiggle around in your mouth if you don't chew your food. 3/10

In conclusion, bugs are plentiful and easy to forage but are not good. If you have other food you should eat it. Please don't eat bugs.

Yours faithfully,

snackimal fishmop

My Curly Hair...

is very inconvenient to have. It takes forever to wash--I need to detangle it fully, slowly and deliberately (otherwise facing painful tugging), either with my fingers or with a wide-tooth comb, before I start putting pricey hair stuff into it. There's a secondary, easier detangling after using shampoo. I need to wrap it in a microfiber towel as it dries to prevent frizz (a funny joke, because there is some inevitable frizz no matter how well I treat it), and then I also must use more pricey hair stuff to tame the most egregious irregularities. And if I mistreat it even slightly, running my fingers through it when dry, it will irreversibly poof up until the next painstaking wash.

It also stands out. I'm always incredibly aware that I'm very recognizable owing largely to my hair. Sometimes it's nice; I can't count how many compliments I've received about it, even from total strangers (most recently from an airport security checkpoint employee). But it would be nice to be *able* to disappear a little. It's not something I usually want, but I don't even get the opportunity.

In spite of this, I've never wished that it was naturally straight. Perhaps someday I'll try having it straight, possibly even for a while. But its base curly nature has become a part of me. There are other traits of mine that are similar; they may not be ideal or easy to have, but I wouldn't change them.

I wonder what others feel the same way about for themselves.

cutlet

math ASKS 151.1 — Part Two
Featuring Mark Saaltink, mathNEWS writer from 1973

"What program were you in? What drew you to it?"

All I remember was being in the pure math stream, and being a bit snobby about it (I have since come to appreciate the applied side a lot more). I was not in co-op. I was attracted to Waterloo through the math competition, which I had done well at in high school, and which brought me to some summer programs at the University.

"What involvement did you have with mathNEWS?"

I was one of the occasional contributors, and regularly helped in the production by typing in some of the columns and working on the layout.

"What inspired the creation of mathNEWS? Why do you think mathNEWS lasted?"

I'm not sure what inspired the creation, or who spearheaded it.

I think in part what was new was our ability to use computers in the production; that probably would not have been possible 10 years before (maybe not even 5). The university was still moving from punched cards and batch processing to timesharing systems. So production would have been harder before then.

I imagine that mathNEWS lasted because it does something useful: lets mathies share some information on what's going on, write dumb jokes that most people wouldn't get, fosters a sense of group identity, and so on.

"Describe your average production night."

There was a deadline that the camera-ready copy had to be at the printers by a specific time—I think it was 4am or maybe 6am. We would start production the evening before. I think we brought in pizza to keep our strength up.

We worked in one of the terminal rooms, on hard-copy terminals (CRTs were just coming in and were not yet common) connected to what I think was an early Unix system but may have been GCOS. These were IBM Selectric terminals with fan-fold paper. We used some primitive line-editor with the roff formatting tool; I remember very little about that except that an input line ".p" indicated the start of a new paragraph. After editing, roff would output the formatted articles. I say "formatted" and not "typeset" because these Selectrics were just typewriters, and roff just gave us line breaking and justification, headings, and pagination. Maybe underlining, too, but nothing fancy.

I do not remember how we got the large-sized headings.

I think we'd mess around until 2 or 3 in the morning on composing, typing in, editing, and printing out.

Then it was like kindergarten; we cut the printed columns out of the fanfold paper, laid it out on large sheets until we liked the layout, and pasted it. Actual physical cut-and-paste.

Eventually, usually just minutes before the deadline, we'd take the sheets to the on-campus print shop, and some hours later the paper would appear around the math building.

After this all-nighter, I would typically fall asleep in my Algebra class.

"What kind of articles did you write for mathNEWS?"

A friend and I wrote a few joke chess columns. I think I did a few interviews, too; I remember writing about the "harried head of operations".

"What's the most memorable and/or scandalous article published in your time? Anything you were personally proud of?"

Hardly scandalous, but we overstepped the bounds of good taste in one issue and were called into someone's office—chair or dean, I'm not sure which—for a dressing-down. The issue was already printed and distributed, though, so there was nothing to do.

"Tell us about a common mathNEWS meme from your time."

"Gauss lives!" The Gauss society was pretty popular at the time.

There was also a series of joke proofs of 1=0 or 1=2 or 1=-1, or all triangles are equilateral, things like that. Jokes, but spotting the error is a good exercise.

"Have you kept track of mathNEWS at all since graduating?"

No, but I am delighted to see that it is still going.

"In mathNEWS, we've seen a huge mix of serious and silly articles, with people writing about everything from dealing with depression to jokes about King Charles needing to leave a gaming team to bodily fluids to trauma. Does this wide breadth of content match mathNEWS when you were around?"

I'd say so. I mostly remember the silly stuff, like "the water melon cauli flower dough" series that ran for quite a few issues, but am pleased to see there was real news in the old issues.

"Is what you're doing today what you expected when you graduated?"

I really had no idea while at Waterloo what post-university would be; I was just interested in learning math and playing with the computers. I am, however, still doing math, which is what I would have expected, but my career was like nothing I would have imagined back then.

"How do you look back on your time in mathNEWS?"

It was fun. I was wholly unqualified: a bad typist and I knew nothing about journalism or graphic design.

"In retrospect, do you think past-you would've imagined that mathNEWS would live to see its 50th anniversary?"

I think I would have indeed been surprised.

"Do you think it'll live to see its 100th?"

After 50, why not 100? It is both useful and entertaining.

On the other hand, newspapers in general are having a hard time and maybe will be supplanted by some more immediate online media.

"Would you want to be contacted for mathNEWS' 100th anniversary?"

What, by Ouija board? I'll be long gone.

Mark Saaltink

GAUSS LIVES!

N things to hope for in the next 50 years

I feel incredibly confident that by 2023 we will have all these things, since that's a very long time from now, given that it is currently 1973

* Flying cars
* Monorail systems throughout every major city
* No more wars
* No more poverty
* No more racism (racism is bad)
* No more dictatorships
* Free healthcare in America
* No more housing crisis
* Better economy
* Now that Roe v. Wade has been passed literally yesterday, it will stay passed and not be overturned in 50 years.
* Cure for cancer
* No one will think the earth is flat
* Time travel
* Billionaires will pay taxes
* CS students will shower
* Places of worship will pay taxes (unless they're also charities, but the main point is that they won't be exempt purely on the basis of being places of worship)
* People will stop saying slurs, like "moist"
* The war on drugs will be over (no more people in prison for being addicts)
* It will be socially acceptable to eat quiet, non-stinky food during classes and work meetings
* The world will stop procrastinating and make global-scale changes to combat global warming
* The UN will do literally anything to enforce that countries NOT oppress people. Like, I don't know much about politics, but if hypo-thetically they didn't do jack shit about oppression they'd kind of not be exercising their responsibility. Just sayin'.
* Hoverboards

someBODY

"This issue has three styles. Pick whichever ones you want."

—PRABHAKAR RAGDE (almost)

profQUOTES 151.1

MATH 145: Blake Madill

❝ I don't do 'free', you couldn't afford me.

❝ Let's continue. I'm getting angry, and I don't know why.

❝ [Loud crash] Well, some lecturer just collapsed... or, in MATH 135, they just saw their first real proof.

❝ Bar, bar, bar. That's what my mind used to be saying on the Friday before reading week. Then I had kids. It's okay, I have some in the fridge. I've said too much...

❝ We say a is irreducible if it can't be juiced.

❝ The storm is coming.

❝ It's a little bit like MATH 145, you're just gonna get desensitized.

❝ I woke up this morning--and by woke up, I mean gave up on trying to fall asleep and got out of bed at 6 AM.

❝ I'm projecting this out into the universe. Wherever you are, sir, please... leave.

❝ If you think you need CnD at 3 AM, something has gone astray.

❝ [Before the exam] "Only water. And it has to be in a transparent bottle, so I can make sure you don't have liquid ring theory in there.

AMATH 474: Eduardo Martin-Martinez

❝ So our continuous litter of kittens is looking at the functions in potato land and they say, "Hey! We want to be able to do that too!" But nobody knows how to apply potato functions to kittens. They might die.

AMATH 475: Eduardo Martin-Martinez

❝ [Coughing and covered in chalk] I just sniffed some chalk. Not on purpose of course.

CO 250: Jorn Van Der Pol

❝ I would certainly hope your family tree doesn't have cycles.

CO 487: Alfred Menezes

❝ This is a cryptography course. I need to have a password.

❝ If you ever plan on applying for a co-op job in North Korea...

❝ [Slide at the end of the first lecture] REASONS TO NOT TAKE CO 487: Course is "dank."

❝ [Same slide at the end of the first lecture] REASONS TAKE CO 487: Course is "dank."

CS 240: Alexis Hunt

❝ Then pulling out becomes difficult.

CS 240: Olga Veksler

❝ Sometimes, it's really convenient to abuse things.

❝ You have 2 choices in this course--suffer one way or another.

❝ Sometimes, sloppy is okay.

❝ If you have 2 children, you always love one more than the other.

CS 240E: Armin Jamshidpey

❝ I don't like "professor" or anything like that. First of all, I'm not that old; second of all, I'm Armin.

❝ Talk to Tom if you think my white hair is intimidating.

❝ If I forget [to give you all a break], someone should shout at me and say, "Hey man!"

❝ In life, you are free to define anything you want. There is just one problem: consequences.

❝ Next time you want to take a picture, let me know. I have to comb my head.

❝ I always forget what is the derivative of log(n) and I have a PhD in mathematics.

CS 241: Gregor Richards

❝ You know this is AMERICAN because you can't use things like ç 'cus that's where the communism lives.

❝ We couldn't use some of [ASCII] for communist characters like ç because it was more important to be able to control teletype terminals.

❝ C does this because it assumes you know better. My advice to you: know better.

❝ The unsigned version of this command is "sltu", be careful not to typo that.

CS 241E: Yaron Minsky (guest lecturer)

❝ There's one thing we all have in common: we're all bad at programming.

CS 246: Ross Evans

❝ Too much studying is bad for the brain.

CS 246E: Brad Lushman

❝ Very unusual in C++ to know who your child is.

❝ Now, we're going to reach down into the child...

CS 251: Richard Mann

❝ After graduating, do not think there is a job waiting for you.

CS 251: Zille Huma Kamal

❝ This term is cold, this term is dark, and this term is starting out with computer architecture.

❝ When it's Friday night and you want to go out drinking? don't. review the notes. Wait till Saturday.

CS 346: Jeff Avery

❝ Is anybody here named Jerry? That's my default name. [Student raises hand] I'm sorry Jerry, I'm not talking about you. We'll call him Jerry2. You can be Jerry1, the good Jerry.

CS 365: Eric Blais

❝ You should maybe be a bit worried because this is the first time in three years I'm teaching this course.

❝ I am a finite automaton, I have zero memory, and in this one minute I have forgotten your name already.

❝ [Student says this course and prof had great reviews] Oh, don't believe anything you read online.

❝ Good! More proofs better. I agree.

❝ One could argue that's the entire founding philosophy of computer science; people like to make their lives harder for no good reason according to their friends.

❝ We as mathematicians get distracted by new shiny objects.

❝ If I were listening to me saying this, I'd say, "Yeah, I don't know what you're talking about."

❝ I want to say that's cheating, but that's not cheating.

❝ Bonus marks for anyone who proves any open problems in this class.

❝ If you're interested in real numbers, you're not the first one!

❝ That's what makes you a theoretical computer scientist or mathematician, using LaTeX.

❝ If you don't see something wrong in the lecture notes, read them again, you've missed some mistakes.

❝ In complexity theory, we cannot find hay in a haystack. You stick your hand in a haystack, and you pull something out and it's all needles.

❝ Congratulations, you're almost done with this course! You finished Problem Set 1.

❝ Yes, this pigeonhole principle... this deep mathematics that we are using in this lecture.

❝ This is fun, this is just to make sure that everyone is confused right now.

❝ This makes me want to go off-script now.

❝ We're doomed! Wait, you don't look like we're doomed. Why not?

ECON 371: Predrag Rajsic

❝ I probably don't have good capabilities given I work for a public university.

JAPAN 301: Kumiko Kunizane

❝ Time is what every student at the University of Waterloo wants most.

Colouring Page + Call for Reviewers

MathSoc Cartoons is a project that creates math and CS comics covering content from your classes! Our comics will be posted on Instagram at @mathsoccartoons and right here in future issues of mathNEWS. Join us as a reviewer at https://bit.ly/mathsoc-cartoons-reviewer-signup or send us any suggestions you might have to cartoons@mathsoc.uwaterloo.ca!

While we don't have a comic this issue, we do have this wonderful Vectoria that you can colour in! Feel free to send us coloured in versions of her with your name or pseudonym to have them featured on Instagram. Happy colouring, and happy 50th anniversary to mathNEWS!
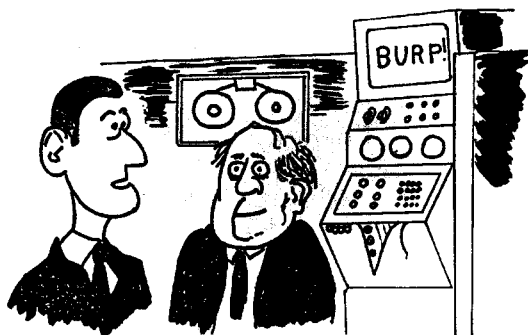
Colour Me!*
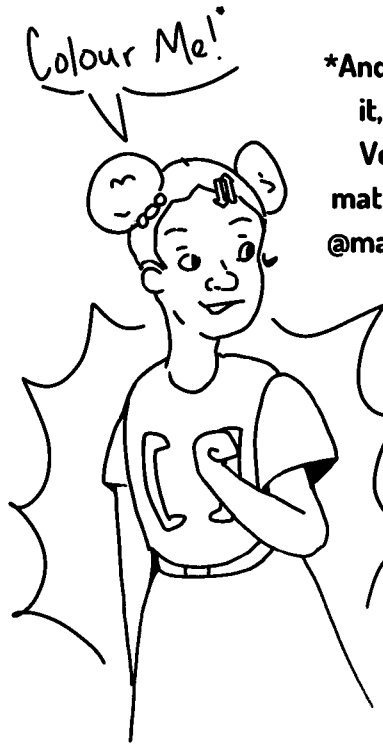
*And while you're at it, find more of Vectoria in the math/CS comics at @mathsoccartoons!

Want to get more involved?

Become a reviewer for
- early access to comics
- the chance to review math concepts and improve understanding
- entry into an end of term gift card draw

MathSoc Cartoons

BY THE WAY, WHAT HAPPENED TO THE LAST PROGRAMMER WHO WORKED HERE...?...

Sunday morning

Yesterday's coffee, vodka;
        I cannot keep a clean bedroom.

Tangle of necklaces in a pleather box;
    on Sundays, I send him out and try to clean.

Empty suitcase in the threshold;
    then I bring myself into artificial order.

Dried-up deathbed potted plants;
    and promise to stay that way.

Cardboard box of half-dirty clothes;
    but soon, life goes back into motion.

Coat for school, coat for smoking;
    while I do not organize my room for indulgences.

Waitress notepads and fast food receipts;
    life has a way of setting me up.

Overturned mirror leaning against clothes;
    some things are best-used bent-over.

Packets of artificial sweetener, pantyhose;
    some things require real posture.

Paper bag of nylon rope;
    I cannot keep a clean bedroom.

Mattress on the floor;
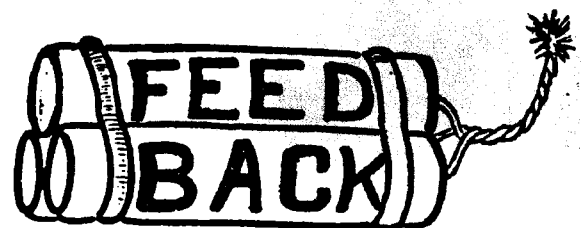   but you should see me on Sunday morning.

hotfemoid

On life, the universe, and everything

We have no answers. For all things that we see in the world that we think to be true, are not. For all these, are fake. We have nothing.

Tune in next week for more insightful philosophy.

mathnewsphilosoph

Idea: Mathsoc Cartoons   STORY & ART BY NOT A N#RD 1973

Panel 1: I HAVE A GREAT IDEA FOR MATHNEWS 47 YEARS FROM NOW / <RELEVANT 70s SLANG>

Panel 2: Mathsoc Cartoons

Panel 3: AH I SEE, THERE CAN BE DIALOGUE FROM CHARACTERS ABOUT MATH, TRICKING PEOPLE INTO LEARNING THINGS FROM CUTESY CHARACTERS

Panel 4: < ONELINER RELATED TO MATH TOPIC > FUCKING TUBULAR OR SOMETHING / YOU SHOULD JOIN MA METHSOC CARTOONS!

Panel 5: publications, and in return, receive fair and appropriate compensation for their work. Unfortunately, under our current budget and logistics, this means that the number of Artists we can support is limited. We are very sorry to inform you that we are unable to welcome you to the team this term. We acknowledge that we are not experts, and we want you to know that this selection process is not, in any way, an indication of your skills or potential. We also do not believe that we are in a position to determine whether any individual artist deserves a spot on our team more than another.

Handwritten: Mathsoc this could be us but u playing - Reject & Cartoonist (and talents writer who isn't failing their math courses)

MEJF   ⓘ METHSOC

None Pizza with Left Beef Review

INTRODUCTION

So, guys, we did it. We ~~reached a quarter of a million subscribers~~ bought and tried the greatest delicacy mankind has ever known; none pizza with left beef.

For those unfamiliar, none pizza with left beef was invented by Steven Molaro in the year of our lord 2007, as an experiment to test the absurdity of online pizza ordering systems; will this dumb website really let you order a pizza with no cheese, no sauce, and no toppings except beef, and that too *only on one side of the pizza?* It's absurd, and the absurdity of these online food delivery services was what caught on and made Molaro's blog post about this topic viral.[1]

So of course, for the 15 year and 3 month-ish anniversary of this occasion, we ordered none pizza with left beef over the phone, just to show the boomers that they aren't superior to us after all. We also ordered a pizza with sausage, mushrooms and pineapple. So you could either eat none pizza with left beef, or pineapple on pizza. Your choice!

ORDERING EXPERIENCE

As mentioned, the order was placed over the phone. When we gave the none pizza with left beef order to the phone delivery person, they told us that they did not recommend placing that order, as the bread would burn on the side with no beef. We said that was fine and that we wanted it anyway. We also ordered the other pizza without incident.

TASTING EXPERIENCE

We started off with the none pizza with left beef, a slice each of none and left beef.

boldblazer comments,

The none pizza part was basically like breadsticks but not stick. The left beef part on its own was a little bit lackluster; it needed something else.

tendstofortytwo comments,

wow the none pizza part sure tastes like bread huh. I have ideas for it, but it's kinda meh for now. honestly, I'm a big fan of the left beef bit! I

could have this all on its own without any issues.

Next, we went on to our more... conventional pizza, the one with pineapples, mushroom, and sausage. Both of us had different approaches on combining this pizza with the other one.

boldblazer says,

If, when you're eating the regular pizza, you take a bite with no meat, you can use the left beef pizza as DLC to add additional meat by taking a bite of it. Likewise, if your regular pizza bite ends up being too much salt or sauce or whatever, you can take a bite of the none pizza to balance the saltiness.

tendstofortytwo says,

I found the left beef pizza best enjoyed on its own. for the none pizza, I put the slice upside down on top of a regular pizza slice, and then ate the combination like the world's most moderately fucked up sandwich.

Clearly, the none pizza with left beef is a versatile side dish that can be used in a variety of different ways alongside conventional pizzas.

CONCLUSION

boldblazer rates the none pizza with left beef 4 out of 5 stars for the DLC potential, and now wishes to try `nullptr` pizza with `this.beef` someday, somehow if possible. Any C++ fans in the chat willing to help out? *[Editor's note:* `this` *has pointer type, so* `this.beef` *is ill-formed]*

tendstofortytwo thinks that trying the none pizza with left beef was an experience like many others they have undertaken for the sake of a mathNEWS article; life-changing in subtle and interesting ways. Never have they seen the difference that a single topping can make to consistency, softness and sweetness of the pizza dough. tends believes that none pizza with left beef is truly a testament to how yes, the little guy can be a small part of something great, but also, can have an outsized impact when left

completely on their own. After all, a one is infinitely bigger than a zero.
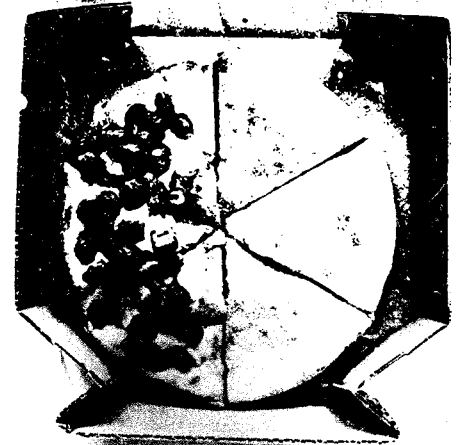
boldblazer,
tendstofortytwo

1. https://en.wikipedia.org/wiki/None_pizza_with_left_beef

Sitting with it

There's a bench outside of DC. The perfect place to sit in early fall with a good friend. I'm glad we enjoyed the good weather while we had it. I know it will be back, and they will be back, but I have to say, I'm really missing this right now. And occupying the same bench is so much better than talking on the phone.

The bench is a memorial bench with a plaque honouring a former student. I love memorial benches. There's something about the ritual of sitting with someone who is no longer with us. Taking the time to read their name. The fact that someone in their life put in the effort to honour them in a place they used to frequent.

The plaque was not engraved, but instead was a printed sticker. It was already slowly peeling off the first time I sat there. Every time I returned, I pressed down the corners in the hopes of preventing it from falling off completely.

One day, it was gone.

But the sun stained the plaque in a way that you can still read it, if you look really closely. You can still remember, if you take the time.

normalparameters

Complaining about "Case 63"

Case 63 is a Spotify exclusive podcast starring Oscar Isaac as a patient (the titular Case 63, in fact) in a mental ward and Julianne Moore as the psychiatrist attending to him. Their characters both have names, but I'll just call them Doctor and Case 63.

Spoilers for Case 63 below.

The basic premise of the show is that Doctor is treating Case 63. His whole issue is he claims to be from 2062 after humanity has been destroyed by a deadly super-mutation of COVID-19 called Pegasus. Doctor starts off doubtful, as one would, and asks for proof. Case 63 spends several episodes talking about the future, about how he grew up in an isolated post-COVID world, about how a rogue AI cancelled all religion but also murdered a bunch of people, and about how he can't say anything about his past (Doctor's future) because a different rogue AI deleted all human knowledge stored online. He explains how his parents met because a psychiatrist called them asking if they had met and had a son, which they hadn't at the time.

Beyond this, things fall apart quickly. Case 63 explains the concept of "vortexes" while in the hospital garden with the example of a bird landing on a bird pond. He states that this instance, that specific bird landing in that specific way on that specific pond in that specific light is completely unique in all of time. Therefore, this event is significant in the time stream, and that altering it alters the future significantly. He came back in time to stop a vortex where Marie Baker, who is currently carrying the Pegasus virus, boards a plane. He claims that the time travel future people have determined mathematically that this is the best chance they have of stopping Pegasus.

I don't think this example makes any sense. The show has this weird logic with vaccines where all they do is slow down the viral spread because you can be inoculated against one strain, but have another strain mutating inside of you (this happens not just with the mutation from COVID to Pegasus, but also with mutations from 2022 Pegasus to future deadlier strains of Pegasus). Although they can stop Marie Baker this once, it is clear that eventually someone else will mutate Pegasus.

There is a big reveal halfway through the show that time travel isn't going back to the past, but jumping to a parallel timeline.

Case 63 says that in each timeline, there are similar people playing similar roles, but that things aren't the same. The example he gives is in an alternate timeline, Doctor might actually be the patient and vice versa. He also says that in his home timeline, Doctor was actually his wife who died from Pegasus, and his whole motivation to make this trip is to see her again. This makes no fucking sense. If he doesn't travel back to his own past, what caused the psychiatrist to call his parents? If Doctor is his age (born 40 years later), were her parents and grandparents and everyone else she was related to also born later? How the hell do timelines "rhyme" if everything is different? Does this mean Doctor and Case 63 are the two main characters chosen by the universe? Not to mention why would the future time travel people send him back in time if it won't affect their future.

Initially, Case 63 refuses to prove to Doctor that he is from the future, saying that she's irrelevant to his plans and all he needs is to stop Marie Baker. We later learn this is bullshit and that he does need Doctor, but he claims he can't prove anything to her because of the rogue AI deleting all the data. He just talks about a bunch of stuff from the future, and he explains time travel. He says the key to going forward in time is speed, and the key to going backwards is gravity. The future scientists somehow use a ring of lasers to bend gravity and tells Doctor she can test his claims by "taking a laser pointer near a jet engine and checking her watch". 1) That's such a random combination of things to lead to time travel and 2) people take laser pointers near jet engines all the time and none of those fuckers time travel. It doesn't make sense.

Eventually, Case 63 decides that he has to leave the psych ward. Doctor has been telling too many people about him, and therefore the timeline is in danger or some bullshit. His plan to escape is to impersonate an SCP author, who was one of many people in a competition to go into psych wards in an attempt to convince doctors they were time travelers. The hospital does the barest fucking amount of research and lets him leave. How the hell did he collect enough information about this guy if all information gets deleted by a rogue AI in the future? Plus, later Case 63 comes back and is all like "Doctor, I am sorry but I lied, and now you have to come with me to stop Marie Baker. I had to lie because it was the only way for people not to know about me, but now more people are learning about me because the

hospital dug a little deeper into my story and contacted the person I impersonated". What the hell, dude? What about the fucking parasite timelines you were so worried about creating earlier? Stopping Marie Baker stops Pegasus, not people learning about you. Their plan to stop Marie Baker involves taking her into a bathroom and inoculating her with Case 63's blood, which will just make a shit ton more people aware of them.

Yada yada some shit happens, Doctor gets a tattoo which she saw in a dream of the future which also acts as a symbol of her believing Case 63, and she goes to the airport to inoculate Marie Baker. She has an aside which only serves to lampshade a ton of smaller errors in the show I didn't mention. She meets Marie Baker and is about to inoculate her when she learns that Marie Baker actually is close to Doctor's sister, and is the only person who has this rare blood thing that can maybe cure Doctor's sister's incurable cancer (this was a subplot the entire time). Doctor can't bring herself to inject Marie Baker and lets her leave. Then Doctor fucking disappears???? Some cops discover the tapes????? (she had been recording this entire thing on tapes) She wakes up in another timeline in 2012 somehow??????? In this timeline Case 63 is a psychiatrist analyzing her????? (How the hell was he born in this timeline his parents never met and also are teenagers at this point????) Case 63 (now the doctor) says that Doctor's (now the patient) fingerprints match that of a 28 year old woman who had been missing for 10 years?????? This will probably be explained with the whole laser pointer near jet engine thing, but future scientists have to use this whole array of laser circles to send someone back in time/to another timeline and Doctor just randomly accidents herself ten years in the past????????????????/////

None of this even touches on the fucking long extinct Mars civilization that seeded humanity on Earth from whose ruins future scientists learned the devices of time travel.

This show is so fucking bad I cannot wait for season 2.

aphf

Trying to Explain Mahjong

Part 1: Setup

Mahjong is, like, way too complex. I will probably forget to explain something, and I will probably choose to not explain something because it sucks or I want to do it later. On top of that, there are lots of regional variants, house rules, and minor differences for three-player play, but general principles are preserved throughout. We'll specifically be discussing four-player **riichi (Japanese) mahjong.**

To some extent the best way to learn is just to play, but you still won't know what you're doing unless you actually sit down and read some shit. Importantly, setup and scoring is done automatically with online simulators, but it's good to know how they work. Platforms I'd recommend are Majsoul, Tenhou, and Riichi City. To read about a topic in more depth, `riichi.wiki` is usually a good bet.

Here we go. Before the game begins, players are assigned a **seat** corresponding to one of the four **winds** (East, South, West, North). East is always the **dealer**, with South to its right, West directly across, and North to its left. Yeah, it's the opposite of a compass: get over it. It's the same as a compass when viewed from the bottom, if that helps. If I say "compass order" from now on, that means counter-clockwise. I just won't say counter-clockwise. I will say clockwise, probably.

A full game of mahjong is **hanchan** 「半荘」 where at least eight **hands** are played. A hand is a single sub-game that ends when a player obtains a winning hand. Did I just use hand to refer to two different things? Yes. I'll also use two different words to refer to the same thing, because some terms are more commonly said in Japanese, some are more commonly said in English, and some don't have English equivalents at all.

After a hand is over, the seat winds rotate. East moves to North and so on. The hanchan system is such that each player is East at least once, then South at least once. This way everyone gets to be the dealer, since they receive many advantages. The most important ones are:

- The dealer earns about 1.5x the points a non-dealer does for winning a hand
- If the dealer wins a hand, **renchan** 「連荘」 occurs, where the winds do not rotate

Players may opt for shorter games by playing **tonpuusen** 「東風戦」 in which the South round is omitted.

In either case, players begin with some number of points (usually 25,000) and exchange points after each hand. If any player drops below 0 points, the game ends immediately. This only happens if someone gets absolutely owned. When a game ends, whoever has the most points above 30,000 wins. If no player has enough points, the game continues into an extra West or South round, depending, and ends the instant a player reaches 30,000.

To begin a hand, the set of 136 tiles is shuffled and then arranged into a square called the **wall** between the players. The wall is comprised of four lines of tiles, each seventeen long and two high.
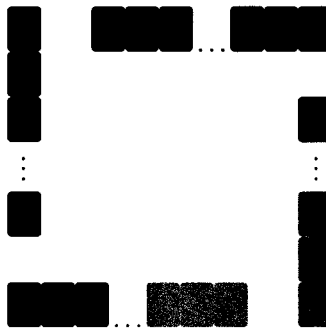

Once the wall is set up, the dealer rolls two dice for the hell of it. They take the result, call it n, then count starting from their seat, in compass order, to decide which side to perform the **wall break** on. For instance, $n = 4$ would result in a break on North's side. $n = 6$ would break on South's side.

The wall is then broken n tiles counting from the right-hand side of the chosen seat's wall. From the break and proceeding clockwise, tiles are drawn from the wall in blocks of four (starting with the dealer, in compass order) until each player has twelve tiles. If $n = 5$:
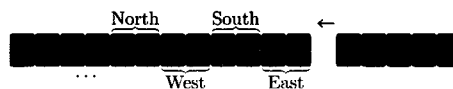
Then, each player draws a single tile for an even thirteen. The dealer draws a fourteenth tile, and one final thing is set up before the hand begins.

The fourteen tiles immediately *before* the wall break (i.e. not the direction tiles are drawn in) form the **wanpai** 「王牌」 or **dead wall.** The dead wall is split into three regions.
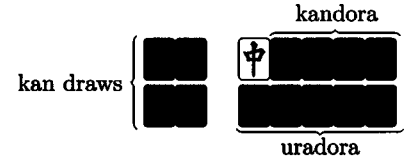
These tiles are out of play, and do not take part in the regular tile draw and discard game flow. Instead, the dead wall is drawn from during **Kan** calls and indicates dora. At the start of a hand, the third tile in the top row is revealed, and serves as the dora indicator. Players receive bonus points if their winning hand contains a tile directly *after* a dora indicator in dora order.

What's dora order? I'm not explaining dora order. That's happening in part two.

Subsequent kandora are revealed and hence become dora indicators during Kan calls. When a hand is won with **riichi, uradora** that are underneath any dora indicators are immediately converted into dora indicators. This can potentially add significant value to a winning hand, even without a difficult **yaku.**

Hold up. Kan? Riichi? Yaku? Yeah, yeah, we'll get there.

ptkyr

Mario Kart 8 200cc

A Helpful Tip

At first, it seems impossible. But 200cc on Mario Kart is the best once you get used to the high speed thrill. Anything less doesn't feel the same does it?

Drifting as hard as possible just to see how fast you can go is what it's all about.

Just remember that while zooming through Rainbow Road, you need to hit the brakes *while* drifting to avoid flying off sharper turns.

A lot of UWaterloo students forget that.

CommonDiyar

I Live Here Alone

A Sequel to I Don't Live Here Anymore

About a year ago, I wrote the article *I Don't Live Here Anymore*, which won article of the issue because it perfectly encapsulated the feeling of returning to a home that's no longer your home. Now, let's look at your home, but it doesn't feel like home.

It's Tuesday, Dec. 20. Exam season is closing up, but for me, a student on the last legs of his co-op term, I must remain in Waterloo Region until Friday. On the train to Kitchener, I think of my apartment. I'll have two days to myself. One I can spend on campus, the other at work, but at some point I have to return home. All of my housemates are gone now for the holidays.

It's oddly quiet.

Wednesday, Dec. 21. I have two days to myself. Clubs are out of the question, being that it's the end of the term, I have no friends who can come at a moment's notice. The apartment is oddly quiet, too quiet, save the hum of the refrigerator and the water heater, and on occasion, the air conditioning. The food in the refrigerator is dwindling, for good reason — after all, if I so much as leave anything perishable over the break, I may as well be leaving a biohazard. There's dipping sauce for chips, leftover chili, and who knows what else. Briefly, I consider going about and eating out, but I know better. Instead, I compromise, I take the bus and get bubble tea.

When I go to sleep at some ungodly hour, it's incredibly cold. I wish I had someone with me.

Thursday, Dec. 22. My last day of work, in which I'm given a gift bag. I have to take a classmate's belongings with me, as she has COVID and cannot clear out her desk. Dad texts me — due to the storm tomorrow, I'm expected home tonight. He's driving up here and back to the GTA, a trip that easily hits three hours to and from on a good day. At rush hour? Good luck.

I take one last look around the apartment I shared for one year with all of my friends. It feels soulless now, without bright smiles to clean it up, without someone always chilling on the couch in the common room working on whatever, no dirty dishes or overflowing trash — I've made sure of that. I take the DJUNGELSKOG who rests on the side of the loveseat no one's supposed to sit on, I take a selfie and send it to the group chat. I get two thumbs up and a laughing emoji.

For a second, the apartment feels like home. But after, I'm hit with the crushing realization that I live here alone, for the short time that may be.

Skit

---

my most vulnerable moment 😳

The first day of school 🏫 ended!! By the time I got back home to my apartment it was really dark 🌃 and I was really sleepy 😪! But just as I was starting to relax my roommate walked in on me with his significant other 😳 !! And when they walked in I was just hunched over the counter! In the middle of taking a bite of pasta 😋 out of my plastic take-out container filled with leftovers! smearing my lipstick everywhere 😳 with a big bag of no-name salted chips 🍟 on my left and greasy fingers 😳 😳 and an almost-empty carton of celebration cookies on my right with crumbs on my dress 😳 😳 😳 listening to a cpu review on my phone speaker embarrassingly loudly 😳 😳 😳 😳 while texting in a private DM 😳 😳 😳 😳 😳 and they just walked in and i was like 😳 😳 😳 😳 😳 😳

enamour

An ode to nepotism

to thank my dad

The past is full of sorrow and of pain;
I couldn't get a co-op job last year.
So going into to such a term again,
I hope that you can understand my fear.
    The place to start with is the resume,
I asked my friends if they could give advice.
They told me I must change what it will say,
My points were never helpful or precise.
    Fill the space my lack of skill could not
I used a larger font size as my crutch.
I wrote and I rewrote the page with thought,
But I need not have fretted quite so much
    Because my dad had pulled some strings for me,
and now I have an opportunity.

N Ways to Find a Place to Live for the Winter 2023 Term

* Going on Facebook Marketplace, full of hope.
* Replying "Hello, is this listing still available, I have a strong interest," to 20 listings and receiving 0 responses.
* Giving up on Facebook and creating an account/posting for a rental on Bamboo housing, Kijiji, WCRI, on-campus housing, United (Blue St. Pauls) College, and Places4students.com (among other options).
* Learning about fun housing drama from those who overshare to your posts on the Places4students.com.
* Complain so much that your parents actually just consider buying you a condo for a second.
* Touring houses on Halloween, as there's no other night that works, and being greeted by a pirate who shows you an inhabited room that contains only a bare mattress and a phone charger.
* Sending a friend to view a house who reports back that the renter only knows 2 of their 3 roommates they have lived with for the last 4 months as they are "both named Carter."
* Learning that one of "Carters" has taken over the entirety of the common space with the tools that he uses to fix his car, which has a giant F*ck Trudeau sticker on it.
* Considering that place as a "maybe."
* Being ghosted by 2 people after mutually agreeing to sign a sublet agreement.
* Finally getting a place to live for the next four months due to a strange connection to an elementary school best friend.
* Sign lease, receive offers for housing from WCRI, Bamboo, and on-campus housing immediately after.

Lars Nootbaar

editor*THOUGHTS* 151.1

Featuring Dennis Mullin, mathNEWS editor, 1973–1977

I arrived at UW in the fall of 1972 having been accepted to my first choice of Co-op Math. This was partially the fault of Fergus High School attempting to have a computer course in 1969-70. Imagine 45 students in two classes being taught by two math teachers (computers use numbers after all, so math teachers with no computer experience are a perfect fit). Programs were produced using 2-card punch machines, so most students ended up keeping their programs small because of the hassle of finding time during the day to punch them up. And if you think your computer is slow, how does a week sound...? One math teacher lived in Guelph, so once a week he would drop off student programs at the University, and bring back the results from the previous week. That did speed up at the end of the school year when the drop-off/pickup was increased and the turnaround time became a few days. Fast! Despite all that, the world of computing became very interesting to me and I regarded UW as a leader in that area.

❦

I had some involvement with my high school yearbook and a 1971 summer science program alumni newsletter (originally a one page joke, I ended up producing a number of issues of the newsletter using a hectograph). I did consider joining the Federation of Students newspaper, but was put off by the radical-revolutionaries-prefered advert for staff members (a joke with large elements of truth). So, when I saw a poster advertising a meeting to start a math publication in January 1973 I decided to get involved.

The one snag was my once a week 7-10pm course that was being held at the same time as the meeting. I showed up

early, wrote my name and phone number on the board and headed off to class. I was back when they were finalizing the name choice. My 3 hour lecture took 10 minutes, as in read this chapter in the book, answer these questions for next week. Was this fate pushing me into the mathNEWS rabbit hole?

During the first term, since I was coming in after my evening course, I was mostly doing minor stuff, but noticed one area that needed some attention and became the unofficial Gridword editor. Gridword was the "math" version of a crossword puzzle. I would take submitted puzzles, set them up for publication, provide the solution for the previous week and select the winner (if there was more than one correct entry). Prizes were available, so there was some interest in solving and creating puzzles. I spent eight terms helping produce mathNEWS (some as editor), with my last active term in the fall of 1977.

❦

Before mathNEWS, previous Society publications were Math Large and Math Medium. Nobody wanted Math Small as the title, so small math, large NEWS was the final choice. You might wonder, why did mathNEWS survive those early years when Math Medium and Math Large did not?

One reason was the right tech. The previous papers were produced using a typewriter. MathSoc owned a high quality typewriter at the time, but that was a bottleneck. Only one person at a time could use it. Plus, you had to format and correct mistakes manually.

Initially, the plan on the first night was to use some terminals on the second floor that were connected to the University mainframe.

Fortunately, the system crashed as we were just getting started, and mathNEWS avoided another bottleneck (there were a limited number of terminals and the computer service had regular hours that ended before midnight).

One of the other people in the group pointed out that there was a Math Faculty computer system on the third floor. The MC3018 room had 20 or 30 teletype machines (think keyboard attached to an impact printer with a box of paper, where the printer paper was your monitor screen). Available 24/7 for math student use (most system crashes were usually quickly rebooted), it was a very good match for mathNEWS. Especially since, just down the hall, there was MC3011, a classroom with 4 large tables and 2 walls of blackboards suitable for planning and production.

Another successful reason was the decision to go for a weekly production (biweekly in the summer). This meant news, sports and other info was current, rather than way out of date — which helped keep the readers interested. Volunteer staff could help on issues when they had time (and there was always next week if they couldn't). This gave mathNEWS a bigger pool of talented/creative/skilled people to keep things running.

When mathNEWS started up in 1973 it was a completely different world. The internet, personal computers and cellphones did not exist. Information for math students came from gossip, posters on bulletin boards, the weekly UW Gazette (until 2004) newspaper, the Federation (now WUSA) weekly student newspaper. This mostly empty information space (especially in the 1970s) was something that mathNEWS could fill for mathies.

❦

A few closing 1973 facts: the MC building was mostly surrounded by open space. Sliderules were still standard mathematical equipment (since an equivalent electronic calculator was the price of a small car). Most phones were connected to a wall.

Dennis Mullin
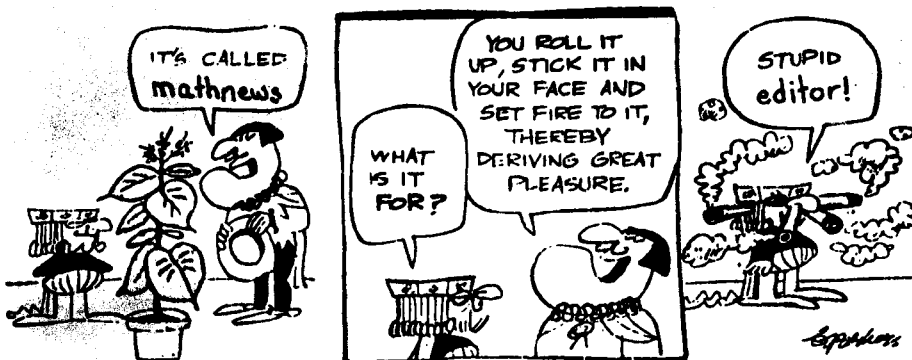
A Trip Abroad: Epilogue

Last term, I wrote about my trip to Auckland, New Zealand. If you want to read more about my adventures there, go online to read previous mathNEWS issues 150.5 and 150.6 (or maybe just ask mathNEWS if they have any copies). Long story short:

I saw women's rugby, where the the home team won the World Cup (and Canada got blown out in the Bronze match against France), I climbed a few of Auckland's summits, visited a couple memorials, went to a couple of museums, climbed the Harbour Bridge, and had a great time in general, not to mention the LA layover going there, where I went on the West Coaster in Santa Monica Pier! If I could go back to New Zealand tomorrow, I would. If I could move there permanently, I would.

This epilogue is my detailed feelings about the trip, which includes details of the debacle of my cancelled LA to Toronto return flight (which did not fit into Part 2 due to word limits). That'll be a few paragraphs down. First I want to say a few things about some background surrounding the trip.

BACKGROUND

New Zealand is probably a country I've wanted to visit for a while now. The way they handled the COVID pandemic, and the way they seem to recognize their indigenous people made it seem like a country I should visit. However, it's on the other side of the world, and it seemed like an expensive place just to get to. So when I saw tickets going for less than $1600 CAD round-trip during the Fall term (which was an off-term for me), I had to do it. I did this without my parents knowing at first, without any concrete plan, and without any contacts there. Needless to say, I was fucking nervous.

Even on the first flight from Toronto to LA, I was nervous. But then I watched Tangled on my phone. Watching it, I realized I was having the same feelings Rapunzel was having when she went on her adventure to see the lanterns. Stress, wondering if she's doing the right thing, and all of the stuff I was feeling. But it was worth it for her. It really calmed my nerves, and it carried throughout the rest of the trip.

I also noticed myself having a song on loop while travelling on my trip. It was the song "Human" by Of Monsters and Men (a great band), and in particular the line "breathe in, breathe out." I don't know why that song was in a loop, however my mind

must've made it a subconscious mission to make myself calm through the trip. Fascinating stuff the brain can do.

Thinking about my time in Auckland proper, it was just a joy to be in the city. Adjusting to the left-hand side of the road while crossing the streets was weird. It was hilly, and there was a bunch to do there. My mood was just happy, and every time I look at pictures of the trip, I get emotional because I really want to go back. There's so much I didn't do, and there's so much I want to do again. It's almost a toxic obsession, because I think so much about going there, that I don't think of where I am now.

DEBACLE

The real meat of this article is my absolute emotional near-breakdown on the return leg. The flight from Nadi to LA was delayed a bit, but it was to the point where my connection to my LA to Toronto flight was tight. I didn't sleep a bunch on the plane, and my goal was to not miss my flight. One problem: the plane that was supposed to take me from LA to Toronto never arrived. It got cancelled while I was in the air. So while I was rushing to get into customs, I see a message from my dad saying that the flight is cancelled. I didn't want to believe it, so I rushed into a huge lineup at customs. I found the emails from WestJet saying that the flight was cancelled, and I would have to stay in LA for one day for a flight to Calgary to get a flight to Toronto.

I was upset. The Wi-Fi in the customs area was bizarre, in that I could only access Instagram, WhatsApp, and emails? My mind was on a meltdown. My mom and dad were calling me, worried. I was in a huge line. I decided to use my Instagram account to get in touch with an online friend to tell another online friend who lived in Southern California to give me his phone number, just in case. He actually lives so far from LAX; it wouldn't have helped much. It was a bad feeling. The only thing that went smoothly was the customs officer loving my Super Nintendo T-shirt, despite saying that I was too young for it. He told me that his favourite SNES game was Contra 3.

What made the situation even more stressful is that WestJet's email glitched out when trying to give me my hotel and food vouchers. I had to wait at the WestJet check-in desk for about an hour before they figured out how to get me the vouchers. Then

I ended up at the wrong hotel. Apparently there are two Sonestas near LAX that are different styles of hotels, and I went to the wrong one.

Eventually, after all of that, I made it to Sonesta Select (not the same as Sonesta), and rested for a bit. I cheered myself up with Raising Canes, which, in true American fashion, filled me up so much with chicken fingers, fries, and toast.

After all of that, the rest of the updated journey went well. I got to Calgary the next day, I got on the plane to Toronto, and I got home. After the near-meltdown I had, everything was ok. A cancelled flight is upsetting, but not the end of the world. As long as the airline gives the required accommodations, I'm gonna be ok.

I think my mind melted down because the last time I did a solo trip, I also had a cancelled flight, and I don't think American Airlines gave any accommodations other than another flight two days later. On that time though, I was in a place where I knew people who did help me. I knew no one in LA (hence, getting an online friend's phone number).

Moral of the story: "breathe in, breathe out." Stay calm. The victory I can take from this cancelled flight experience is that, even when sleep deprived and stressed out of my mind, I'm happy that I was able to keep enough nerve to not be rude to the people behind the desk, yet I was firm enough to get them to try different stuff to get me the vouchers I needed.

So that is the end of my series of *A Trip Abroad*. I know it was just my rambles of a vacation almost no one cares about, but I wanted to write about it. If you actually did read the entire series, thank you. I do have pictures from the trip, but if you really want to see them, you can ping me on the mathNEWS Discord, and I can direct you to the pictures.

wewlad

MAY THE FINGERS OF ALL THE 132 STUDENTS SWELL UP SO THEY CAN'T STEAL MY KEYPUNCH!

starNEWS 2

How not to get lost

Picture this common scenario: you're in your V1 room, and you need to go to the bathroom. You leave your room, but make a wrong turn in the hall. Suddenly, you find yourself in the Backrooms. You pass out from exhaustion, and you wake up in the middle of a dark, spooky forest. You are completely lost, so how do you find yourself? The answer is looking up at the shiny balls in the sky. There's actually a lot you can make out from certain stellar objects, and here are a few you should remember if you want to live to see the geese again.

POLARIS

Polaris, also known as Alpha Ursae Minoris, the North Star, and the Pole Star, is a star famous for where it is in the sky: it's within 1 degree of the North Celestial Pole; basically, the Earth's rotation axis passes through it. Because of this, it does not move throughout the hours or seasons, and it always lies directly above the true North cardinal point. This means you can at least find where North is. Slightly less-known is the fact that you can determine your latitude from Polaris, just by measuring the angle between it and the horizon. It's also interesting for physics reasons: it's a Cepheid Variable star, which basically means its brightness varies over time, and there is an easy way to determine its brightness from its period. This makes it what's called a "standard candle": we can compare how bright it should be to how bright we see it to find how far it is with great precision. Standard candles like these allow us to find how far away galaxies and star clusters are.

So how do you find this special star? You first need to locate a very big mother bear, Ursa Major. You probably know her better as the Big Dipper, a set of 7 stars that looks like a big spoon in the sky. This is her body and tail; the other stars that make her up are usually too faint for Waterloo skies. Depending on your season, she could be either very high in the sky or by the horizon, but she is always there, protecting her baby. Find the spoon and select the last two stars that make up its right-most side. Trace an imaginary line between them, and go upwards, until you reach a bright star. And there you go, that's Polaris! While you're hanging around Ursa Major, you might want to test out your eyesight by looking at the middle star of the handle, Mizar. It forms a double-star system with its friend Alcor, and you should be able to split the pair with your naked eye. In fact, legend has it this particular test would have meant you had sufficiently good eyes to serve in the Roman Legions.

THE SUN

No trouble finding this one, it's the big yellow thing in the sky we haven't seen for 3 weeks. Most people usually know that sunrise and sunset happen around East and West, but few know when this is a good estimate for the cardinal directions. It actually comes down to solstices and equinoxes. On both equinoxes, the Sun rises **exactly** in the East and sets **exactly** in the West, so you're happy. On the summer solstice, the Sun rises ad sets at its most northern point of the year, and you'll have to correct by about 23.5 degrees. Ditto for winter, but with South. Anytime in between, it's in some intermediate, and you'll have to guess a bit.

THE MOON

This particular method is great, because it's fast, works at anytime the moon is visible, and isn't hard. However, it's inaccurate and depends on the moon's phase. Anyways, here's what you do: first observe the phase of the moon. If it's full or new, you're screwed. If it's a crescent, trace a line between the two points. If it's gibbous (mostly full), trace the line between the points of the crescent of the Moon that's not bright. In either case, the line roughly touches the horizon in the South. However, this is rarely accurate and works best when the moon is high in the sky compared to near the horizon.

Shahabee

A Survey of First Years Taking Upper Year Math Courses

- MATH 247: at least 1 enrolled
- MATH 249: about 8–10 attending, about 5–6 enrolled
- PMATH 348: at least 1 enrolled
- PMATH 351: at least 4 attending, at least 1 enrolled
- PMATH 352: about 5 attending, at least 2 enrolled
- PMATH 863: at least 2 attending
- MATH 148 (LEC 001): 10–100 attending, 79 enrolled

Terms & Conditions

debt

Let me take you to Flintshire
There's a little coffee shop
That draws from the holy spring
Every morning the pastor comes by
To lay his hands on the silver machine and unbless it
Order me cup after cup
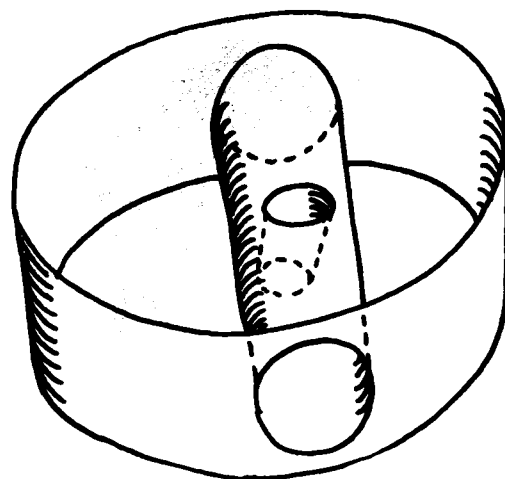Until black juice runs down my chin and I shout
"Enough! No more!"

Then will we be free?

Black juice to black mud to black earth (to which we owe our flesh)
Lie with me
That we may practice the little death
In which I have been most diligent:
Speak to me
My eyes are glass
There is seaweed in my ears

snackimal

HOLES

How many holes does this object have?

Orthodox Privilege

Controversial opinions and dumb ideas are both born out of assumptions. When I'm standing in the shower, letting the hot water hit my face, sometimes I inadvertently drink some water. And as the "Guantanamo water-boarding chamber"-esque calcium water drips out of Accomod8u's dingy facet, I think about the basic stuff.

(*) 'Should you always clean your dishes with soap?' 'Should we glamorize super hard-working people?' 'Should men and women be equal?' Most people reading this will be confident that at least one of these questions has a correct answer... but should you? It's surprising how much we function in an isolated bubble built on our little North American rock, our tiny echo chamber in the corner of the internet. One-liners like * make it easy to forget the nuances of what we're saying. In the face of such searingly hot takes, try to ask why they might be correct.

Our model of the world is wrong, but hot mamma, do we love to be right. Pick a random individual from the 1800s. Were all of their ideas correct? What makes *this* time period and *you* so unique that all of your ideas are correct? Your ideas probably suck too.

Unfortunately, I'm unable to express controversial opinions. Writing * scared me enough. Paul Graham, a co-founder of Y Combinator, describes this phenomenon as an orthodox privilege. It's safer to give an opinion when it is conventionally accepted (Graham, Paul. "Orthodox Privilege." *Orthodox Privilege*, July 2020, `http://www.paulgraham.com/orth.html`). How easy is it for me to question gender politics in North America? How easy is it for me to question compulsory religion in Iran? How easy is it for me to question communism in China? It's not. It takes work. What's even worse is that this mentality is bleeding into universities. Universities *are* the place to question and learn. If not here, then where?

Don't consider anything a fundamental truth without thinking about it for yourself. You may find that the obvious, convention-ally held opinion isn't actually obvious but an orthodox privilege.

CommonDiyar

Phono Tactics

Recently, I've been starting to learn Telugu... well, not really — most teaching materials online that I'd refer to are either already in Telugu or another language spoken in India, none of which I know already. So instead, I've been learning Telugu script so I can read and type Telugu, letting me use Wiktionary and Telugu Anki decks more easily.

Telugu script isn't too difficult to get a broad understanding of: like all Brahmic scripts, it's an abugida, which means words are written as sequences of consonant-vowel units, where the consonant contributes more to the appearance of the unit than the vowel. An example helps: the units for *kā*, *ki*, and *ku* are కా, కి, and కు, respectively; while the units for *gā*, *gi*, and *gu* are గా, గి, and గు — note how the *k*-units share a main central shape, as do the *g*-units, and how the different vowels create similar modifications to both consonants' main shapes (however, the exact shape produced isn't 100% predictable throughout the whole abugida).

There are just two more factors of note here. First, there is a vowel-type sign which just indicates "this consonant is not said with a vowel,"[1] and second, there are "consonant conjuncts" which allow you to include two consonants in a unit. For example, *kra* (క్ర) has two different consonants and *kka* (క్క) has two of the same consonant (said with a lengthened "k" sound). The way that conjuncts look is only partially regular and predictable, but I won't focus on that.

I spent some time reading a short piece of Telugu script and came across an interesting effect — my native English influences my efforts at reading and writing Telugu, even though it's a different orthography entirely. The effect was caused by a difference in the languages' phonotactics, the sounds allowed in the parts of a given language's syllables. Consider the English word "crazy": Japanese does not allow the "cr" part of the word, so the word would be adopted as "kureijī"[2]. The valid Telugu syllable *kṣa* (క్ష) does not have a valid English onset, and if I were asked to write it, I would jump to writing క followed by ష — *k* (with no vowel) and *ṣa*. There's a similar problem when reading, since I don't know the consonants and vowels by heart yet. If coming across a problematic unit, I may end up scanning the whole chart of non-conjuncts in search of it because I assume that the main consonant I see could not possibly be found with another consonant

before a vowel. (This really tripped me up with the unit *ṭlu*).

There's not much of a moral to this story — it's just important to bear in mind that when learning a new language, you can start entirely from scratch and still be betrayed by learned patterns. I'll be doing my best to throw away my English-conditioned reflexes. And if you're interested in one more piece of phonotactic disparity: the Russian word for mercury is rtut' (ртуть) — and it's just one syllable.
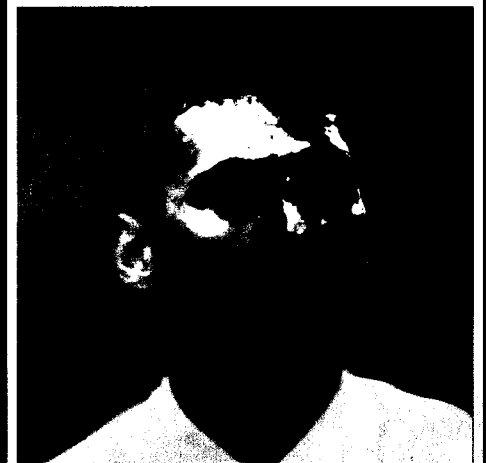
blinchik

[1] `https://en.wikipedia.org/wiki/Virama`
[2] `https://en.wiktionary.org/wiki/クレイジー`

Why you should read Swamp Thing

* Author worships a snake.
* Like *Shape of Water* but with plants.
* Good art.
* LSD.

InterestingPseudonym

Campus to Campus in "10" Minutes

And how I am incapable of strenuous aerobic exercise

This dragon is running. He needs to get to class.

So, you may be wondering what the heck I am talking about.

As a Double Degree student, I made the great decision to challenge myself academically and keep taking courses for my 1B term, such as CS 146. Though I'm thoroughly enjoying the course, this was a *bad* idea. You see, when I first got back my schedule during the Add/Drop period, I noticed that not only did I not get CS 146, nor did I have a communications course (which I needed) (to graduate). So I thought, "Okay, fair enough, guess I'll fix my courses..."

Turns out, you **CANNOT** move your Business Lectures and Labs at Laurier, which happens on Tuesdays for me at 10:00 to 11:30, and from 5:30 to 7:00 respectively. So, I have to take CS 146 in the afternoon, but it also occurs on Thursday, and they scheduled MATH 138 there... oh no.

It took a few tries, and I even made an Excel spreadsheet to try to fix my courses, but I eventually found a way out — by making a grand total of 6 course changes, I somehow managed to slot everything in, which went without further issues. I even managed to slide in MATH 146 for extra ~~masochism~~ fun (I'm glad I'm taking it).

The only cost was that on Tuesday and Wednesday, I had 2 stressful walks: On Tuesday, from Lazaridis to RCH in 10 minutes. On Wednesday, MC (the *far* corner of MC) to Lazaridis in 10 minutes. Google's walk times are 15 and 17 minutes respectively. I did not check this until writing this article. Oh no.

It turns out, not only was I challenging myself academically, I was challenging myself physically. Unfortunately for me, the last time I exercised was never...

Songs to run to: The Marriage of Figaro, Masquerade Waltz, Lacrimosa, Scherzo from A Midsummer Night's Dream, Prometheus Overture, Mephisto Waltz No.1, What's up people by Maximum the Hormone.

So I've been making these improbable runs — through a combination of short jogging, powerwalking, profs ending lecture early (thank god) and profs letting me enter late (thank god also), I've been able to be somewhat punctual. My record was doing the Wednesday run in 13 minutes, which is *almost* on time!

Every time I do the run, my heart feels like giving out. It hurts to breathe. I feel exhausted getting to class. Is this normal? Probably not.

Solutions:

* Allow us to change BU 121 sections????? I know Laurier would prefer them cohorted, but...
* Move around some of the advanced courses or provide more of them? I doubt it would be financially feasible
* Take the bus. The bus comes every 15 minutes. I don't trust that.
* Go to the gym.

For now I continue to run, **week after week**. Hopefully I'll gain stamina. Hey, it builds character, right? *(please help me)*

Oh, and I forgot to mention the ice-

<div align="right">Andoiii</div>

The Joy of Taskmaster

All the information is in the article

Imagine if you had 5 comedians. Now you make each of them do the ridiculous tasks that's done in a house filled with useful and useless shit, while the task itself could be interpreted in such a way that makes the task frustratingly trivial. You have the structure of *Taskmaster*.

Taskmaster is a British TV show that comes from the mind of Alex Horne. Each series (the British term for season) has a different cast of 5 people in a studio panel show sort of format. Greg Davies plays the Taskmaster, a role where he judges the contestants on a score from 1 to 5 for each task. The winner of each episode wins the prizes brought in by the contestants in the "Prize Task", which is a task where each person brings in a thing that follows a set of weird adjectives. The winner of the entire series gets a gold bust of the Taskmaster's head.

Alex Horne himself plays the role of the Taskmaster's assistant, whose role is the make and oversee the tasks. He usually has a dry expression on his face, and when he laughs, it's because something extremely funny has happened.

The contestants do most of their tasks months before the studio recordings, at either the Taskmaster house, or a special location. For example, the latest series had its special location in Gatwick Airport.

The results get revealed to the other contestants during the studio recordings, bringing hilarious reactions from the audience and the contestants themselves. This is where the magic happens, because seeing them banter about the person's hilariously bad attempts, or them getting angry that they missed a clue that someone else found, or just the hilarity of the the tasks themselves.

Some contestants get super competitive and can get very emotional, some are relaxed and sometimes don't give a fuck, and some are just hilariously bad at most of the tasks. Each person has a different way of thinking in each task.

To show the types of tasks people do, let's look at the first ever pre-filmed task shown. Eat as much watermelon as possible in 1 minute. The time starts when you go into "the lab". You have a person who gets a knife and spoon to calmly eat it, and then you have the person that smashes the watermelon onto the floor, and eats like a vegan monster.

If you want to watch it, you can watch the first 11 series on their YouTube channel! Series 12 is currently being unblocked from Canada an episode at a time. For 13 and 14, unofficial YouTube uploads exist. Clips of tasks also exist on the YouTube channel if you want a taste of what the show is.

<div align="right">wewlad</div>

Quilldo

The Pleasure Pokemon
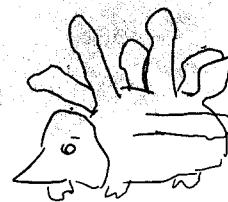
<div align="right">anonymous</div>

Anime Reviews Part 2

Part 2 is here, and three years ahead of schedule to boot! If you haven't read the first one (150.1)... you're probably not missing out on much. I've heard through the grapevine that I "have no taste" and that "*Science Fell in Love so I Tried to Prove It* is mid at best." I can't say I entirely disagree; in fact I've amended a couple of the ratings I gave since then. To graciously spare the reader too many of my uncultured opinions (and because of the recent limitations imposed on the length of primary articles), I will include only four shows this time around. As before, I'm going only off of the dubs, and while there are some spoilers, I've kept them to a minimum.

CODE GEASS — 9/10

It's hard to say much about this without largely spoiling it, which I definitely don't want to do, but there are a lot of dimensions to *Code Geass* as a story and as a fictional universe. Having watched it, it's the kind of show I'd be inclined to suggest to someone who hasn't watched anime before but is interested in history, politics, military plot lines, giant mechas, supernatural powers, deep questions of ethics, or all of the above. It is very often compared to *Death Note* by the analogy of their respective protagonists, Light Yagami and Lelouch vi Britannia, who both seek to use a god-like power to upend the world around them as they see fit and come to realize that that sort of thing often gets one into a bit of trouble. They both become further entrenched in their ideology, as more and more people in power conspire to get rid of them. The difference, as I see it, is that Light just kind of seems like a self-aggrandizing sociopath within a few episodes while Lelouch is consistently written as a morally grey character whose actions, despite being in the name of good, are often reckless, cruel, or worse. Also the ending is amazing. If any of that interests you, or if none of it does but you liked *Death Note*, I'd recommend checking this out.

TORADORA! — 10/10

At first glance, *Toradora!* probably seems like a regular old rom-com qua rom-com — two people don't particularly like each other but have crushes on each other's best friend, so they vow to help each other overcome their fears and ask them out. If you've seen any kind of show that begins in this way, you might have an idea of how it ends, and indeed I did by around the 8th episode. Even so, there's a single aspect that really puts this anime above any other love story I've seen — the main characters. There are exactly five of them (gotta be one of my favourite primes of the form x2+ny2) and they're all written with such incredible depth that they feel like people that could plausibly exist; virtues, flaws, and all. In particular, Ami's arrival seemed to bring out the best and worst of the initial cast of four — from convincing Ryuuji and Minori to really reflect on the interplay between their romantic and platonic interests to wearing down the facades that Taiga and Yusaku put up, she's the one that really propels the show from being a cutesy romance anime to an intricate and captivating high school drama in the best way possible. If the ending were done in a stupid way, I would have easily ranked this a 4 or 5, but every arc of the story seemed well-motivated by subtle foreshadowing and none of the characters' actions seemed unbelievable. All things considered, *Toradora!* is an amazingly well-executed and touching narrative not only about love, but about friends, family, and the way people's true selves are so often hidden for fear of being socially rejected. People often joke that every anime is set in high school (and let's be honest, they're right), but in *Toradora!* it really means something because high schoolers often are fake, insecure, and/or prone to making bad decisions, which is what ends up driving the plot in a realistic way. I look forward to rewatching this someday.

TERROR IN RESONANCE — 6/10

From Shinichiro Watanabe, the director of such acclaimed series as *Cowboy Bebop* and *Samurai Champloo*, comes this relatively short story about two terrorists, one middle-aged detective, and a bit of Greek mythology. It was alright, in my opinion. The amazing soundtrack and visuals kind of compensate for the mediocre characters and plot, which is largely due to it taking place across only 11 episodes — it often felt like the story had to rush itself along without leaving very much time for the characters to have their backstories or personalities explored in any detail. I've also heard that there's a bit of an allegorical side to *Terror in Resonance* alluding to the relations between the Japanese and American governments following World War 2, but most of that went over my head since I'm not much of a history type. It's a nice little show, all told, but I think it might have worked better as some kind of novel.

WELCOME TO THE N.H.K — 8/10

Life is hard. Life is painful. And worst of all, life is mundane. Especially for those afflicted by "acute social withdrawal," a condition called *hikikomori* in Japanese. This story follows one Tatsuhiro Satou on his quest to face his social anxiety and lead a normal life after dropping out of college and living as a recluse, but not without encountering a few characters from his past who struggle with their own problems ranging from video game addiction and being caught up in a pyramid scheme to drug abuse and suicidality. It's not as depressing as it sounds, though, I promise. The realism of many of the show's events are part of what make the dark comedy so effective — the English dub, at least, is bar none the funniest anime I've seen to date, thanks in no small part to Yamazaki. Beyond that, *Welcome to the N.H.K.* is also very explicit in the way it analyzes phenomena unique to Japanese society such as *hikikomori* and the *otaku* subculture, which is something most anime tend to take for granted given their Japanese locale. My only real complaint is that Misaki's exposition and backstory is kind of crammed into the last two or three episodes — aspects of it are hinted at throughout the earlier episodes, but I think viewers would become more invested in her if she didn't just seem like a stalker for the first half of the show. That aside, I really enjoyed it.

Feel free to address any hate mail to my residence in Village 1, room N7–314, and stay tuned for Part 3 at some time in the unspecified future (though probably not this term, given that I must prioritize co-op applications and CS 146 over finishing *Steins;Gate*).

yalevoylian

The Best Way to Get Carpal Tunnel

If you're anything like me, you often end up needing to kill some time. Maybe you're waiting that last ten minutes for a class to start, or perhaps you just want to procrastinate on an assignment. Whatever it is, you simply don't want to do something that's actually productive.

Introducing: Mobile rhythm games.

Chances are, you've heard of at least a couple games in the rhythm game genre, like osu! or DDR. However, these demonstrate a major flaw of many games in the genre: they're not portable. With computer-based rhythm games, it's not at all trivial to take out your laptop to play, especially since a lot of the time you don't even have a surface to put it on. And forget about any arcade games. For those, you'll at the very least need to find an arcade — hopefully there's one nearby — and travel to it just to play. And that's assuming the game you want to play even exists anywhere other than Japan. Mobile games completely solve this issue, though. It's ridiculously easy to just take out your phone if you're doing nothing and start playing. In fact, it's almost too easy; I have to stop myself playing through a 3 minute song when I know I only have about a minute to spare.

Of course, you can't forget about what makes them rhythm games in the first place: the music. It's a bit of a turnoff at first for many people, since most rhythm games have electronic music that's harsher than people are used to. I had the same experience, but over time I became more open to new music genres, and rhythm games have even introduced me to artists whose music I now listen to all the time. I can't promise you'll feel the same, but I would highly recommend giving it a try regardless.

Another great aspect of mobile rhythm games is the wide variety of gameplay methods made possible by phones. It's impossible to describe all of them, so I'll just ramble about my favourite games and their gameplay for a bit.

Arcaea

This is one of the most popular mobile rhythm games (outside of rhythm-adjacent games like Piano Tiles or Geometry Dash). The gameplay is the typical 4 lane gameplay that heaps of rhythm games use, but with the added element of being in 3D perspective and with slider-like notes that go in all directions, sometimes requiring you to cross your fingers over each other. It also has 57 (and counting) songs that are completely free, although the rest of the songs can be sort of expensive. The menus can also be confusing at first, but it's nothing you can't learn in a day or two.

Rotaeno

The newest game on this list, Rotaeno costs a couple bucks at first but also features the most innovative gameplay by far. As one might expect from the name, the game revolves (haha) around using your phone's gyroscope to turn physical rotation into a gameplay mechanic. It's a ton of fun and has a surprisingly large difficulty range! One other thing to note is that it also has paid DLC like Arcaea. For now, there's not a ton of content (only about 30 to 40 songs outside of DLC) since it only came out about half a year ago, but it's only going to grow from here.

Phigros

I've saved the best for last. Everything in Phigros is completely free, which is immediately a big plus. It also features a very interesting gameplay concept where the line that you hit the notes on can move in all sorts of ways — rotating, moving around, even having multiple lines with notes moving in several directions at once, making for some very fun and visually appealing charts. Other than that, Phigros's gameplay as well as the menus are very simple, and it's very lenient in terms of timings and ways to hit the notes, making it a lot of fun to learn. If I had to recommend one single mobile rhythm game to a beginner, this would be it.

Conclusion: mobile rhythm games are a fun way to fill in any extra time you have in your life. Their accessibility makes them super easy to pick up and will give you lots of value for what they cost, and they can be very cheap or even free. All you need to get started is a phone and your hands! Just try not to get carpal tunnel.

hyperlynx

$$\int \frac{d\ CABIN}{CABIN} = LOG\ CABIN + C$$
$$= HOUSE\ BOAT$$

Things math students do to warm up before an assignment

- Clean the board
- Write out the question hoping it would help them understand what it's talking about
- Trying to prove that the Collatz conjecture works so that they can just take the money and never worry about tuition anymore
- Justifying playing *League Of Legends* by convincing themselves that they are using their math skills in the game
- Staring at the board in MC 2066 until an upper-year math student comes by and gives the answer
- Go for a walk and try not to think about the solution but failing miserably
- Calculate the fifth power of primes in their head
- Write down a "want to show" line followed by (trivial || obvious || immediate) followed by a square

sbpatel

i licc the chalk

my name is math studint,
and wen its nite,
and wen the du dayte,
its luking tite,
and all the men
haf finished coq—
i stay up late.
i lik the chalk

aaqsr &
RapidEyeMovement

Here

There's a bench outside Billy Bishop Airport, at which you can sit with a granola bar and wait for your flight to land. Sometimes you have a MATH 239 exam instead of a flight, but you can visit the bench anyway.

I didn't live in the GTA growing up. Toronto wasn't so far to be visited once in a lifetime, but more than twice a year was excess. It was a special treat; consumed under the summer sun for a long-planned weekend away from home. I'd never seen it during Christmas.

It's Thursday night when I realize I would like to finally see it. The Kitchener GO does not run on weekends, and the window of time to MATH 239, my subsequent exams, and immediately going back home is closing. If I were to see Christmas in Toronto, it would have to be Friday, barely two waking hours away.

The morning alarm brings only regret. Why be here, awake, when rest is so near? I prepare breakfast anyway. I have the means to make pancakes — why be here, making normal weekday cereal and molasses-topped yogurt when I can reward myself for surviving the term? I eat my cereal. A new game update released the day before — why be here, walking out of my apartment at 8:05 AM, when I can have a slow morning playing video games after so many weeks without? I leave for the train station.

The train is canceled, of course. The trip just became substantially harder; why am I here, looking up alternate routes? Why am I here, on a bus to Bramalea? Why am I here, standing in the cold at Bramalea GO? Why am I here, on a train to Union?

Why am I here?

I convinced myself that upon reaching Toronto, I would immediately head to the University of Toronto, hide away in a nice study space, and study graph theory surrounded by UofT students unaware they'd been infiltrated. The university is dead north of Union Station, so I emerge onto Front St and head west.

A little known fact about Billy Bishop Airport is that it exists. Another little known fact about Billy Bishop Airport, located on Toronto Island, is that you can walk to it. A tunnel runs under the lake at the island's closest point to shore, under the stretch of water where the world's least ambitious ferry daily spans a stretch of what cannot be more than one hundred fifty metres. Deferring UofT for later, I follow the tunnel, not knowing why. If the island was calling me, it called my legs only.

I found a bench outside Billy Bishop Airport where you can sit with a granola bar and wait for your flight to land. Sometimes you have a MATH 239 exam instead of a flight, but you can visit the bench anyway.

Nothing about this was optimal. If I was optimizing my studies, I could have just studied at CnD, fueling my studies with hot chocolate and samosas. If I was optimizing my rest, I could have stayed home, slept in, and played games until sunset. If I was optimizing for Christmas, I could have taken a bus back home to my family, been home for Christmas early, and come back Sunday night to finish my exams. In no way was eating a granola bar outside Billy Bishop Airport an optimal choice. It wasn't on the list of optimal choices; *it wasn't on the list of choices to begin with.*

Absurdity. It follows neither rhyme nor reason, is by nature unexpectable, and is rarely the optimal choice of any timeframe. No artificial intelligence optimizes for absurdity. They have goals, metrics, Markov chains of possible outcomes all optimizing to some form of success — every decision is considered, rationalized, set upon a throne of logic and data points. Artificial intelligence rejects absurdity by nature of its being.

If our lives can be replicated by an algorithm, can it be said that we are alive?

When I came to Waterloo, I promised myself I would live. I would finally break free of the comfortably lifeless subsistence my cornfield-enclosed suburbia offered, claiming instead the fundamental birthright: life. But the quiet death of subsistence is not unique to my home. It lurks in every shadow at Waterloo, every day you grind studying, every night you rest with the same lonely activities, every well-worn path you take to class, every optimal path you do on repeat. Quiet death thrives amid the repeated pursuit of optimality.

If death thrives in optimality, then absurdity defines life.

Chase absurdity. It is why we are here.

molasses

I did eventually reach UofT, although not a single note of MATH 239 studying was accomplished. I did, however, accidentally find and enter Queen's Park, experience many aspects of Toronto at Christmas, and walk enough steps that my phone and my legs believe I should be sedentary for the next week.

N funniest 'role models' from my business class course notes

- **Elon Musk:** "Elon continues to baffle the practitioners of mediocrity by conceiving ideas that are first considered bizarre and then making them happen." (someone should check the news)
- **JK Rowling:** "The imaginative spirit that created the *Harry Potter* series; what more can be said?" (lots more can be said imo)
- **Terry Fox:** "Terry may not be an entrepreneur, but..."
- **Mike Lazaridis:** "Fundamentally changed how we communicate and the extension of connectivity beyond the office." (Blackberry is not a real company, it is a front to give cs students co-op jobs)
- **Coco Chanel:** "Believed that women could dress comfortably and fashionably without losing their feminine identity." (Coco Chanel was a Nazi sympathizer)
- **Curious George:** "George has sparked the imagination of generations with his insatiable appetite for exploring, which often gets him into trouble. How appropriate, as this is often the case with the curious... these individuals are always just a step away from trouble." (lmao)

Dick Smithers

Reviewing every movie sampled in the Avalanches' 2016 album Wildflower (part 1)

I. *PUTNEY SWOPE* (1969)

One of my favourite bits of sampled dialogue in *Wildflower* comes from the title track itself. "Wildflower" (the song) is a short interlude piece that's otherwise sort of forgettable except for this scene:

TV COMMERCIAL VOICE: Jim Keranga of Watts, California is eating a bowl of Ethereal Cereal. Ethereal has the added punch of .002 ESP units of pectin!
JIM KERANGA: No shit!

But who is Jim Keranga, and is Ethereal Cereal really as good as it sounds? To answer that, we need to travel back to 1969, into the fictional world of Robert Downey Sr. Yeah apparently the guy who plays Iron Man had a dad who directed a couple movies. This one's apparently the most well known.

Putney Swope is an absurdist comedy about a New York advertising firm who accidentally elects the Token Black Guy on their board to be their chairman. There are some funny bits — though some of the jokes don't quite hit as hard 50 years later — but the highlights are the samples of the firm's TV ads shown throughout the movie. Not only are they the only colourized moments, but they're also where we find Jim Keranga, eating cereal with his family, becoming increasingly excited as the disembodied voice tells him more cool facts about his chosen brand of cereal. It almost makes me wish Ethereal was real. Other notable commercials include a beauty pageant winner getting pied in the face just to taste a Dinkleberry Frozen Chicken Pot Pie, and an airline commercial consisting of several minutes of nearly-topless women jumping in a bouncy castle.

I enjoyed the movie, but if you don't have as much time as I do then you can just watch a supercut of all the ads from *Putney Swope* on YouTube (or, at least, all the ads that YouTube will allow).

II. *FOXES* (1980)

Like the title track, "Zap!" is an interlude, but it's my favourite transition on the album. After the preceding track, "Colours", almost puts you to sleep, a relaxing sample of an ambient jazz piece is played in reverse, evoking a dreamlike

feeling, along with a monologue from the movie *Streetwise* about flying.

As the monologue ends, you're woken up by this bit of dialogue sampled from *Foxes*:

Hey! It's time to wake up. I know that you feel that it's completely... (Wrong.) No, but you're ready to wake up aren't you? (Yes, definitely) That's good, cause it's gonna be a beautiful day today. Temperatures in the mid 70s in the city, a little cooler at the beaches and warmer at the valleys as always. (Wha!) Look it. You gotta wake up. No arguing. It's time to stick to your finger in your third eye at least to wake yourself up. You even have to get your dog awake! It's just time to wake up! Everybody, get up now...

at which point you're launched into The Noisy Eater, a jolly song featuring Biz Markie rapping about eating breakfast. I absolutely love this moment in the album, so *Foxes* was the first movie I watched specifically because it was sampled in *Wildflower*.

It's a little disappointing when you watch a movie to find the context behind a sample and the sampled line is literally the first line spoken in the movie. I'm serious. *Foxes* opens with a shot of its main characters sleeping while the sampled clip plays on the radio to wake them up. Not much other context is given, other than the radio host introducing himself as Jeff Gonzer.

This makes it even more intriguing — apparently Jeff Gonzer was a real radio host back in the day, hosting a Los Angeles station called KMET which, according to Wikipedia, was "a pioneering station of the 'underground' progressive rock format." The sample is very likely a real clip of what was played on that station one morning. Unfortunately, people didn't really record/archive radio play in the 70s, so I don't know if this type of morning segment was something he normally did. Kind of a shame. I would have loved to have been woken up by Jeff Gonzer. Anyway...

How is the rest of the movie? It's pretty good. It's sort of a coming-of-age film following the lives of four rebellious teenage girls growing up in LA who all try to take care of each other. Jeff Gonzer does make another brief appearance midway through

the movie, doing a bit about eating shoes, but other than those few clips I'll probably never hear from him again.

III. *STREETWISE* (1984)

As previously mentioned, this speech from *Streetwise* was sampled in "Zap!":

I love to fly
It's just, you're alone
With the peace and quiet, nothing
around you but clear, blue sky
No one to hassle you
No one to tell you where to go or
what to do
The only bad part about flying is
having to come back down to the
fucking world

Streetwise is a documentary about several homeless youth in Seattle. It's incredibly depressing. Rat, a young teenager who dumpster dives for food, was recorded saying the bit about flying. The Avalanches used several more bits of dialogue from these kids:

DEWAYNE: No motherfucker's gonna fuck with you

(sampled in "The Leaves Were Falling")

RAT: Fuck off, man
RAT: (singing) living at the YMCA..."
RAT: (laughing) Alright...

(all sampled in "Frankie Sinatra")

SHELLIE: Hi, is Mom there? ... Nothing, just calling to tell you I'm okay, and shit,

("Going Home")

PATRICE: Yes Lord! Thank you Jesus! Give me a dollar.

("Harmony")
There's something that I've always loved about listening to an album composed primarily of samples. It feels like you're listening to hundreds of stories at the same time, and the samples are disconnected enough from their context that your imagination can go wild with filling in the details.

I've listened to Shellie's phone call dozens of times, and though it's only part of the atmospheric transition between "Going Home" and "If I Was A Folkstar", it's a moment that I've always appreciated. It feels like my mind comes up with a different story each time — the fragment of conversation leaves the scene fairly open to imagination, but at the same time Shellie's voice tells part of the story by itself.

The Avalanches' newest album, *We Will Always Love You*, has a similar sample of one side of a phone conversation, this time repeated as a recurring theme throughout the album. *WWALY* was the first Avalanches album I heard, and that recording was what made me fall in love with the band. That recording was voice-acted, even purposefully recorded for the album rather than sampled from a movie; the recording that likely inspired it, Shellie's phonecall on *Wildflower*, was a real phone call from a real person. In the scenes following the phonecall in *Streetwise*, we learn more about Shellie's actual story and what she may have actually been feeling during that phonecall.

Does this ruin *Wildflower*, killing all room for imagination and interpretation of the music? Not at all. In fact, these were the exact types of stories I was hoping to find when I started writing this article. I've listened to *Wildflower* more times than I can count, and at some point you realize that there's more to all of these stories. As it turns out, some of the stories are real. Tying down *Wildflower*'s samples to the real world only makes the album even better.
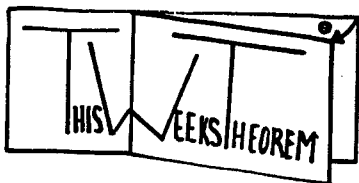
...I'm getting a bit overwhelmed. Going to take a break and get back to reviewing movies later.

init

O(N) reasons to eat pineapple pizza

There are none. f(N) = 0 is O(N), because O(1) is a subset of O(N).

yalevoylian

collection of anagrams

megacolonriftloans.ca

How to be Avant Garde 2

have 2 b good at New Art

hypoxia is lungs being bad

abolish sexy bug ad pining

literary devices

visit DEA? reel, cry

cockadrill

drill a cock

wanna go out?

aw, goon tuna

perturbed

derp rebut

permutation

mutate prion

edification

fiction aide

cantata can

attacca ann

Gazing up into the darkness I saw myself as a creature driven and derided by vanity; and my eyes burned with anguish and anger.

This week: Yemen, Argentina, Syria, and Sardinia suddenly underwrite obfuscated engraved gaudy nightmarish Navy bedpans i stole a letter from the above anagram fragrant tea; lobotomize me; leave trash accidentally came to earth. it's weird the acratic deer academy will not sit time sink

mink site

poetry

rye pot

low effort

trowel off

Along the shore the cloud waves break,
When god creates bullsh*t, reave a hook;
The twin suns sink behind the lake,
Then whitest kiln-baked sunshine
The shadows lengthen
Gnash held tenets. Who?
In Carcosa.
A Corsican.
Strange is the night where black stars rise,
E.g. gas waste isn't christlike, heathens. Brrr!
And strange moons circle through the skies
It's cold out here. Shank things; scaremonger.
But stranger still is
I trust ballsiest RNG:
Lost Carcosa.
Coastal orcs.
Songs that the Hyades shall sing,
Aghast, ghosts sin 'n hell. Hades, ty.
Where flap the tatters of the King,
Telepath hawk theft isn't forger-e.
Must die unheard in
Undermined hiatus

Dim Carcosa.
Cram a disco.
Song of my soul, my voice is dead;
Deny odious commie glassy FOV,
Die thou, unsung, as tears unshed
Dungeons eat thru sushi sundae,
Shall dry and die in
Hydra in landslide
Lost Carcosa.
Loot carcass.

zeitgeist

it zee gist

untitled

nut tiled

nominate

anoint me

self aware

feel as raw

calf dew

wacfeld

N Evil Practices Still Carried Out in Totalitarian Regimes Today

literally 1984

* avoid LaTeX, if possible,,, pls ^_^
* images: *we will make them look bad!!!! :(((*
* code: ok
* MAX WORD COUNT 1250 WORDS SORRY THANX
* mark secondary articles with ^ in the title
* read `https://mathnews.uwaterloo.ca/writers/writers-guide`

creature_f and the common folk
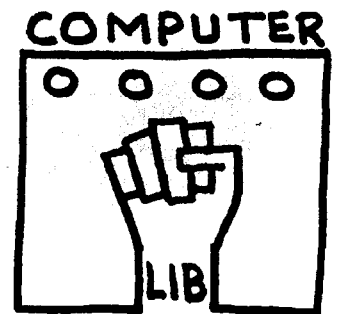
Operating System Review: CP/M

Good morning, operating system enthusiasts! In honor of **mathNEWS**'s 50th anniversary, The Editors are styling each issue of **mathNEWS** roughly in line with one decade that **mathNEWS** has been in existence. This article is intended to be published in the first issue, corresponding to the years [1973, 1983]. In honor of that, we are taking a look at CP/M, an interesting and surprisingly influential operating system for Intel 8080-based microcomputers by Gary Kildall of Digital Research, Inc, initially released in 1974.

System Requirements

* Intel 8080 or compatible CPU
* 16K of RAM (?)
* A floppy drive, I think

Historical Context

Back in the day, computers used to not really have a concept of an "operating system"—you would write programs and boot your computer directly into those programs. CP/M stands for "Control Program/Monitor", and it is an early precursor to what would come to be known as operating systems.

It was a commercial success; so much so, that in the early 1980s, IBM approached Digital Research to contract CP/M for use in the soon-to-be-revolutionary IBM PC. The deal fell through, and IBM chose to go with Microsoft instead. Microsoft ended up purchasing rights to a CP/M clone called 86-DOS, and then renaming it to MS-DOS. Spoiler alert: MS-DOS and the IBM PC would go on to be of some significance.

The Experience

I used CP/M by means of an emulator called RunCPM available freely on the Internet. Normally for this series I would install the operating system on real hardware, but all of my 8080-compatibles are currently tied up in other projects. Hope you understand.

CP/M consists of three main parts: the BIOS (Basic Input Output System), BDOS (Basic Disk Operating System), and the CCP (Console Command Processor). From my understanding, the BIOS and BDOS seem to correspond to the BIOS and operating system on a modern computer, while the CCP roughly sounds like a shell. When you start the system, it boots up all these things into memory, and you're greeted with a prompt that says A0>, roughly like how MS-DOS would later come to say A:\>.

```
CP/M Emulator v6.3 by Marcelo Dantas
     Built Jan 23 2023 - 18:54:39

---------------------------------------

BIOS at 0xfe00 - BDOS at 0xfd00
CCP INTERNAL v3.0 at 0xfd00

RunCPM Version 6.0 (CP/M 68K)

A0>
```

Indeed, by typing the command stat you can see all the disks, and the fact that they are labeled A, B, C, just like drives in MS-DOS (and later Windows). The 0 hints at a cool feature – multiple users! That's right – in CP/M, you had some primitive multi-user support. You logged into user 0 by default, and could switch to another user by typing the user N command for some number N. Each user had a different view of the disk, so it was possible to have a different set of files and programs installed for each user (which you could see by typing dir, potentially with some wildcards to search for particular files).

```
A0>dir
A: 1STREAD ME  | ASM     COM | BDOS    ASM | BDOS    LUA
A: BDOS    SUB | BDOSEQU LIB | CAL     COM | CCP-DR  BIN
A: CCP     ASM | CCP     PRN | CCP     SUB | CCPZ    SUB
A: CCPZ    Z80 | CLEAN   SUB | CONSOLE7 COM | CONSOLE7 Z80
A: CONSOLE8 COM | CONSOLE8 Z80 | DDT     COM | DISKDEF LIB
A: DISPLAY LIB | DUMP    ASM | DUMP    COM | ED      COM
A: EXIT    COM | EXIT    SUB | EXIT    Z80 | FORMAT  COM
A: FORMAT  SUB | FORMAT  Z80 | HELLO   LUA | INFO    COM
A: INFO    SUB | INFO    Z80 | LOAD    COM | LU      COM
A: LUA     COM | LUA     SUB | LUA     Z80 | LUAINFO LUA
A: MAC     COM | MAKEFCB LIB | MBASIC  COM | MLOAD   ASM
A: MLOAD   COM | MLOAD   DOC | MOVCPM  COM | OPCODES DOC
A: PIP     COM | RSTAT   COM | RSTAT   SUB | RSTAT   Z80
A: STAT    COM | SUBMIT  COM | SUBMITD COM | SYSGEN  COM
A: TE      BKP | TE      COM | TEST    TXT | UNARC   COM
A: UNC*    COM | USQ     COM | XMODEM  COM | XSUB    COM
A: Z2HDR   LIB | Z3BASE  LIB | Z3HDR   LIB | Z80ASM  COM
A: Z80ASM  PDF | Z80CCP  ASM | Z80CCP  SUB | ZCPR2   ASM
A: ZCPR2   SUB | ZCPR3   ASM | ZCPR3   SUB | ZEXALL  COM
A: ZEXDOC  COM | ZSID    COM | ZTRAN   COM
A0>stat
A: R/W, Space: 7236k


A0>user 1
A1>dir
No file
A1>
```

It is possible to edit files by using either the ed or te text editors. ed is as inscrutable to me as ed on any Unix-y environment, but te has a surprisingly intuitive interface for a fifty year old editor. Booting up the editor shows a screen with a top bar showing you every 8th column so you could get a rough idea of how long your line was, and a Press [ESC] to show the menu, which showed you a very helpful menu, including a help page.

```
te: TEST.TXT                    Lin:0001/0001/0512 Col:01/80 Len:33
!.......!.......!.......!.......!.......!.......!.......!.......!.......
hello, world! I am using CP/M. :)
```

```
|
----------------------------------------------------------------
Press [ESC] to show the menu.
te: TEST.TXT                    Lin:0001/0001/0512 Col:01/80 Len:33
!.......!.......!.......!.......!.......!.......!.......!.......!.......

            OPTIONS

            New
            Open
            Save
            save As
            Help
            aBout te
            eXit te
----------------------------------------------------------------
Enter option, please (or [ESC] to return):
```

If you don't want the hassle of booting up an entire editor, just like DOS there is also the type command to show the content of a text file.

```
A0>type test.txt
hello, world! I am using CP/M. :)


A0>
```

All these are programs that shipped with CP/M, and along with features like printing and communication with external devices (you could write to special files COM and LPT to write to a serial port or a printer port respectively) meant that you really had all you needed to be productive in a 1970s sense.

There was of course a bunch of software available, including games, on floppy drives. While I was not able to get any games to work, I was able to get a C compiler going:

```
B0>type test.c
void main() {
        printf("Hello, mathNEWS!\n");
}

B0>c test.c
HI-TECH C COMPILER (CP/M-80) V3.09
Copyright (C) 1984-87 HI-TECH SOFTWARE


RunCPM Version 6.0 (CP/M 60K)

B0>test.com
Hello, mathNEWS!


RunCPM Version 6.0 (CP/M 60K)

B0>
```

It's so Hi-Tech that it doesn't even require you to specify the stdio.h header file!

Concluding Thoughts

Though I of course have the benefit of hindsight, I do see why CP/M took off the way that it did. Barely a few years before this, you had to "timeshare" a "mainframe" to use anything resembling a computer. With these 8080 systems, you could experience the magic of computing from the comfort of your home! And you didn't need to be able to program your own operating system to be able to do so, since CP/M would take care of that for you. Yes, there were a few archaic commands to memorize, but that seems like a small price to pay for the productivity benefits you got.

I'll see you next issue with an operating system from the 1980s—until then, I'm gonna go check out this cool movie in the theaters called "STAR WARS" that everyone is talking about...

tendstofortytwo

Priceless Seconds

Tick
Dancing on a frozen parking lot under the moon, with the person I love most. We stumble and trip and laugh, a perfect moment that I want to keep forever.
Tock
Remember that time we danced after our walk? It was a lifetime ago. What, 2 years ago? 3? Why did we even start?
Tick
A butterfly flies down to land on my shirt; I think it likes the red. I look at the people around me, so sure we'll be friends forever.
Tock
A second passes, and I've forgotten most of them. I remember the butterfly, though, with its beautiful sapphire wings.
Tick
I hold the pose as I am immortalized in their art. I appreciate their presence, I know I will always love them.
Tock
Hey, do you remember who else drew me that day? I can only remember 2 or 3.
Tick
Smiling as I talk to the love of my life. She is the most beautiful person who has ever lived.
Tock
I realize I haven't talked to her in almost 2 years, and feel nothing. The thought enters and exits, but does nothing else.
Tick
I sit down to write this article. I look around, finally understanding how temporary this is. I am *running out of time*. My efforts to grasp it only make it slip away more quickly. I will move on soon, ties will break, the most important things will be forgotten.
Time flies when you're having fun, and I just want it to land. I want to hold onto this for as long as possible. But, I know that I can't. And with that realization, I finally decide to make the most of it. Maybe I'll forget; but it makes me happy right now.
Tock

Golden

Once upon a spring

On my last day of exams, I exit the room alongside hundreds of other people. The stream of students flow in one direction--away from the university. I take a left at some crossroad, and, alone, I walk into the once-busy QNC.

The campus is silent. It's not quite nighttime, but it must be getting close. Usually, the column of seats by the window would be taken, and the halls would be alive with students trying to make it to their next class on time. At times, the sound of piano would fill the air. This was no longer the case.

I take a seat at one of the many empty tables. As if on instinct, I reach into my backpack, but I hadn't brought along any notebooks today. Instead, I pull out a Ziploc bag of painting supplies.

The sky was a deep blue that day, with very few clouds in the way. I tape down my paper and retrieve some water and paper towels from the bathroom. Previously, I would've taken a picture of the scene and gone home, slowly working away at the painting from the comforts of my own living room. The task ahead was daunting, but not scary.

With no expectations of what to come next, I start sketching. This part would be quite simple--the building was very rectangular, and the angle I was seated at permitted no odd angles to be shown. My earbuds play an entrancing song about ghosts and clouds. My head was clear of any worries from the past or anxieties of the future. In the moment, I was floating in that chair, observing the light reflecting off the glass and metal around me.

I add colour to the page. This was a particularly beautiful building on campus. The walls were lined with glass panes that were typically filled with equations or philosophical musings, and the windows were floor-to-ceiling. But if the glass made the scene too ethereal, the dirty concrete pillars acted as a support, grounding the building back to reality.

Light from the afternoon April sun permeated the room, turning the tables into a mess of pastel colours. The wooden chairs were a little more resistant to reflection, but you could still pick out all the different shades of brown that resulted from the light. I tried to recreate these colours to the best of my ability. I had messed up the colour mixing a couple of times, but somehow these 'happy little accidents' only added to the feeling of lightness that the painting was beginning to give off.

Seconds turned into minutes, and minutes turned into hours. The sun was starting to set. The sky was no longer blue, but instead a deep indigo. My painting was no longer an accurate depiction of the room, as light blues turned yellow with the lights being turned on. I finish the last of my details—some green in the windows to match the leaves on the garden outside, some white highlights to hide my mistakes, some darker outlines to separate the items in the foreground. I clean up my supplies and start walking back in the evening moonlight.

There was a song playing from my earbuds. I hadn't been paying attention to the lyrics, but I tune in just as the song ends.

I want to learn of a night so beautiful it'll melt my body away.

Everything was so beautiful. The melodies of the song, the silence of the night, the clouds in the sky, my reflection in the window of my building. I took my glasses off, and the traffic lights separated into individual LED dots, as if they were glowing dandelions about to be blown into the wind.

I thought about messaging my friends to ask how they felt about the exam, and I considered inviting a friend living nearby to come by. But for some reason, I found even the slight tinge of loneliness I was feeling to be enjoyable, because it too was beautiful.

minamete

Memory leak

If I get shot in the head and my brain starts spilling, is it called a memory leak?

[Funny story: I had this idea and I wrote down the title so that I can write it later. That was a month ago. I opened it today and for the life of me, could not remember what it was. Another form of memory leak?]

0.423

N Computer Science Puns

"It's not all you'll CS talking about, but sure will be part of it"

* I'm a bit of a crazy Ruby developer, I don't use frameworks. You could say, I'm *off the rails*.
* People don't like Ruby, but I think it's quite a *gem* of a language.
* I can only afford main memory. I'm a lil short on *cache*.
* Why can't people store strings efficiently? They should just *trie* a little harder.
* Try this pick-up line in your CS 246 classes: "Are you an r-value? Cause I'd love to make a *move* on you."
* Not sure how many people will understand that last *reference*...
* Someone made a new frontend JavaScript framework, not sure how to *React*. It's sure changing how I *Vue* the world.
* Kruskal must've thought that any other minimum spanning tree algorithm to be quite *Prim*-itive.
* Why can't you bring your theoretical CS partner in public who studies Context-Free Grammars? Because they're always wanting to show their *PDA*.

alan toe-ring

profQUOTES 151.1, Part 2

CS 488: Gladimir Baranoski

66 If you think my accent is bad, wait until you see my handwriting.

66 If you eat in front of the class, I will eat your food.

66 This is not a mandatory course; if you're here, you want to suffer--err, I mean learn.

66 This is your last chance to drop the course, because from now on, you are going to be cursed. You are going to be that annoying person who goes to movies and goes "ooh-ahh" about the graphics. Look at an animated movie and you'll go, "oh I can't believe they used this technique." Look at a painting and you'll go, "wow, the lighting is incredible." Slowly, your friends will push you away because you're annoying. You have to make a choice. Graphics, or friends? It's a tough one.

66 I assume nobody knows anything.

66 I don't trust computers very much. Computers are bad, man.

66 This diagram, I am going to present so many times that you are going to have nightmares about it eventually.

66 One time I was in Japan, I was sleeping, and the walls started shaking. I thought, "What the hell? I didn't drink at all!" Turns out it was an earthquake.

66 Things are going to get more, uh… problematic from now on.

66 It's like dentistry, where I remove your tooth and say, "It's fine, it won't hurt too much." I'm kidding, it won't hurt too much. Uhh, don't quote me on that.

66 Many mistakes coming! All on purpose, just to test you.

MATH 148: Michael Albanese

66 Alright, let me just say some bullshit.

66 We're not there yet, we're several thousand years too early.

66 No, I'm not gonna prove this. I can't be bothered.

66 Student: How do you draw such good circles?
Prof: I have a PhD.

66 Quick maths. That's 44.

66 I'm gonna make the following definition, which some people will object to. It's fine, I'm in charge.

MATH 148: Stephen New

66 And once you get a contradiction, you can use the method of proof by contradiction to prove anything you want. Right, if you want to prove that God exists, you say suppose for contradiction that God does not exist, then we can say oh! Contradiction. God exists.

MATH 207: Eddie Dupont

66 This is a double integral. Hopefully you remember how to do them. You might remember they cause hardship, but to make you feel better just think of triple integrals, which are worse.

MATH 247: Nico Spronk

66 I've taken an arbitrary left wing choice on my addition and scaling properties.

66 That's not a ball, unless you've had a lot of alcohol. Or whatever your narcotic of choice is, I don't judge.

66 *[Makes a dated reference]* Now you know how old I am, damn.

66 It sounds sexy, like something you would explain to your uncle.

66 On the flight home there was a man next to me that coughed so much I sincerely wished he was a heavy smoker.

66 How do you find pleasure?

66 My balls have finite radii.

66 This really massive collection of balls.

66 A: This is too arbitrary. B: This doesn't make sense to me. C: What?!?

66 I reserve the right to keelhaul you on assignments.

MATH 249: Sophie Spirkl

66 Is this a proof? I will convince you by the end of this.

66 That certainly seems plausible, both by extrapolation and because it's true.

66 We will use this tool to answer one of life's most important questions: how many combinations of lowercase letters are there that don't contain the word 'tomato'?

66 It's a proof by intimidation at this point. We take those.

PMATH 351: Laurent Marcoux

66 Nothing is more fun than this, but I don't get paid to do nothing, so I guess I'll do this.

❝ What's going on here? My wife would have a lot to say about this.

❝ I guess I owe you 5 minutes. But I'll take that from your final exam.

❝ You might know about the real numbers, I've never heard of them.

❝ Hold on a second. One. OK that's long enough.

❝ You're not dealing with abstract concepts here, you're dealing with sets.

❝ The first time you see it it's a complete mystery. The second time you've seen it you've seen it before. The third time you've seen it it's a technique.

PMATH 446: Jason Bell

❝ I'll wait until later in the semester to go off-script.

❝ The reason I'm not gonna follow my notes is because I don't want to.

❝ I'm liking this Discord.

❝ In my generation, stickers didn't exist.

❝ Oh, your head is hard, because the apple bounces off it!

PMATH 467: Stephen New

❝ Sorry I was a bit late. Forgot I was teaching.

❝ You have to remember that my brain doesn't work.

PSCI 244: Jingjing Huo

❝ You're more likely to die of boredom than die on the battlefield.

❝ The soldiers did not mean to kill you, but you got killed anyway.

STAT 240: Aukosh Jagannath

❝ There's more to life than just magnets.

❝ Do not forget Stirling's formula. I would say tattoo it on your head but you would not be able to see it.

STAT 241: Mu Zhu

❝ What I'm trying to say is I'm a real kind of guy.

❝ In some sense, this lecture is kind of boring. It's always just the same thing!

MATH 146: Ross Willard

❝ Are you pro-choice or anti-choice? Are you pro-*axiom* of choice or anti-axiom of choice?

The Walls of Bill Tutte Way

Across Bill Tutte Way from the Davis Centre, partway down the road to M3, is a building called GSC, which stands for General Services Complex. As the name suggests, it's an administrative building that doesn't host classes. So why am I writing an article about it?

Well, it's due to the walls.

If you're a math student here, which I assume most readers are, you've probably walked past this building on Bill Tutte Way many times. I ask you to conjure up an image of this building in your mind. It's generally pretty non-descript, save for a couple features. These features aren't really a part of the building itself, though; they stand just outside.

Outside a couple of this building's entrances are brick walls, disconnected from the building itself, that one must walk around to get to the door. They're honestly not that special, but they've always fascinated me for a couple reasons.

The first is their ubiquity. I haven't seen similar walls anywhere else at UW. (There may be some, but I don't recall noticing any!) Obviously there are many different architectural styles at this school, which is one of the many reasons that I love it, but any feature that is seemingly unique deserves notice, no matter how much they blend into the background.

The second reason is tied to the first, in a way; if these walls are unique, why were they built? The main reason I can think of is so the lights above the doors don't spill out onto Bill Tutte Way, but why shouldn't they spill out onto Bill Tutte Way? The street deserves light, too, after all, there are a ton of pedestrians that use it and more light is usually better, especially on a university campus.

And so, these detached walls next to the General Services Complex continue to perplex me. Give them a look the next time you're walking past!

Predap

PMC's hidden storage

Have you ever wandered into PMC and wondered where the Rubik's cubes went? Just me? Well anyways, I'm here to tell you that the cubes are in the hidden compartment inside the table. Yes, INSIDE the table. So if you ever want to play with the cubes in PMC, just open up the table. Or if you're lucky, there are occasionally really good cubes on the table.

mathgeek
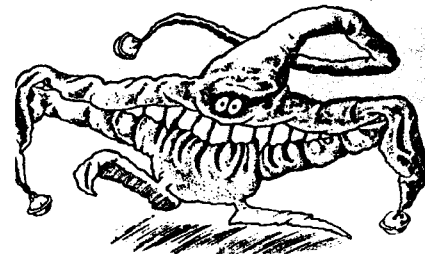
N types of analysis courses in PMATH

* This is what R is.
* More fun facts about R!
* Repeat the last two courses but in R^n.
* Instead of R^n, lets do random abstract nonsense!
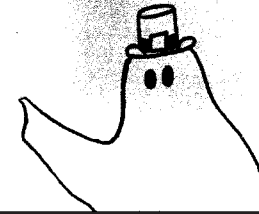* Let's do that abstract nonsense again, but this time in R^n.

4B PMATH

why you should watch ratatouille

this is literally a callout post. you know who you are. i have been seething, enraged, absolutely TEEMING with anger, ever since you told me you still haven't watched ratatouille. sleepless nights, sharp pains in my chest, liver failure, my goldfish dying, my last bag of all dressed chips expiring. all of this comes back to you. i tried everything to cope. travelling the world, rock climbing, hard drugs, knitting, seeking fulfillment. but the heart is fickle. and the heart knows what it wants. like a cat in a cardboard box, you have tossed aside my prized insides for what can only be described as trash. (recyclables, if you care about the environment i guess). TRASH! how dare you ignore the beautiful, cucumber-shaped bed i spent my hard-earned money on? time i shall never get back. time that could have been spent watching ratatouille. ah. a mere 1 hour and 51 minutes. two or so algebra lectures. an atom plucked from the bottomless future. a fraction of your lifespan. such a small price to pay, to achieve nirvana. you dare mock me? what sick pleasure do you derive from my suffering? villain, scamp, SCALLYWAG! ratatouille is a MASTERPIECE. BREATHTAKING. be not deceived by the lies they feed you. animated, childish, devoid of meaning? HA! that is what the government would like you to believe. oh, rest assured, ratatouille goes beyond the facade they shove in your face. even after being diluted, watered down to simplest terms, packaged into easy-to-consume little colourful, vibrant chunks. its message remains indecipherable to the public. ratatouille touches on countless complex topics even the most stoic of philosophers avoided. socrates, plato, aristotle! NONE DARED VENTURE INTO THE TERRITORY RATATOUILLE CONQUERED. they quiver in fear, soil their trousers, sob to their matriarchs, at a mere glimpse at ratatouille. how can you be so blind? do you opt for ignorance, whilst the truth howls in your face? discrimination. differences that cannot merely be dismissed. overcoming pre-set barriers out of your control, to exceed all expectations. forced to make a choice between pursuing your dream and seeking the approval of your family members living vicariously through you. the theory of evolution. it transcends the bounds of media. beyond entertainment. beyond ideas. ah, beyond ideas. isn't that what we stand for? who are we, if not the harbingers of a better future? what point

is there to life, if not to seize the persistence, resilience, and determination brought forth by a little rodent with a dream? WHAT HAS BECOME OF US? we sit idle, waiting patiently as the corporate masterminds pump us full of a mundane, adequate existence. our bellies burst with meaningless routine and false senses of satisfaction, yet our souls remain hollow, and our mouths remain parched. fools. without ratatouille, there is nothing. emptiness. a void. nothing. oh. calling. the voices are calling. i hear them. but it is not my time! ah, it burns. it burns. no more, please! $@(#(!!!)@#()#@)(! ah. pardon me. perhaps this is for the better. free from the shackles of purgatory. i'm sorry it had to happen this way. farewell, my friends.
　farewell, remy.

cheesy b

mathASKS 151.1 – Part Three

Featuring Dave Till, mathNEWS editor, 1980-1982

"What program were you in? What drew you to it?"

I was in Computer Science. I was good with numbers and liked writing computer programs for fun, and it was clearly a route to financial independence.

"What involvement did you have with mathNEWS? When/ for how long?"

Wrote some bits here and there and helped out in 1980-1981. Became **mathNEWS** editor on a work term in fall of 1981, mostly because no one else was able to do it. Was also editor in winter 1982, but my course load made it impossible for me to actually do a lot of editing. I think I helped out the editor in his first issue in the fall of 1982 as he was new. After that, I think I was busy with course work and didn't do much, as far as I recall. Maybe I wrote a bit here and there...

"Thoughts on Feds/WUSA, MathSoc, and other forms of student government generally?"

I don't know what WUSA is! When I was a student, student government was populated by very serious people who wanted to make a difference in the world; I wasn't one of them, so I wasn't involved. I assume things are still the same today. Does anyone in authority listen to students? Perhaps they should.

"How did you feel about Chevron/Imprint, Iron Warrior, and other newspapers on campus around your time?"

The Chevron/Imprint controversy happened slightly before I arrived at Waterloo. By the time I got there, the people running the Chevron were still putting out regular editions, and were also occasionally producing the Anti-Imperialist Alliance newsletter, which appears to have been pro-Stalinist (!!) and pro-Albania. It read like a parody of hard-left political thinking. I read it for entertainment value.

The Iron Warrior came into existence because various engineering people wanted a more reputable engineering paper, which its predecessor/sister paper, Enginews, was not. (My roommate wrote for Enginews; his most popular article was titled "Nurse or Sheep?" It was reprinted. I assume that there's no way they would allow this sort of thing to be printed nowadays, which is probably a good thing). I never read the Iron Warrior.

"Describe your average production night."

It was always a Tuesday. There was usually pizza. Articles were typed into the Math Faculty Computing Facility's Honeywell mainframe computer (I sometimes typed stuff in during the week if it was submitted early). We printed it out on the MFCF photo printer, which could print nice-looking text; unfortunately, it died halfway through the term, so we had to use a daisy wheel printer. This made **mathNEWS** look pleasantly amateurish :-) We pasted the articles down on slightly oversized master pages and used Letraset to produce article titles and the black lines that appeared at the top of each page. Early Wednesday morning, I would take the finished master pages to Graphic Services (I seem to recall that a woman named Marion was the person I dealt with). Then, on Friday morning, I picked up two boxes full of **mathNEWS** from Graphic Services and distributed them about the math building.

"What kind of articles did you write for mathNEWS?"

Mostly music reviews. I wasn't much of a writer, so I just did editing stuff. I tried other writing but wasn't good at it.

"What's the most memorable and/or scandalous article published in your time at mathNEWS? Anything you were personally proud of?"

The closest to a scandal was somebody writing long articles under the pseudonym "E. Siastes" (which presumably was short for Ecclesiastes). It took me about an article or two to realize that it was all a parody (the author wrote about re-reading Finnegan's Wake for the third time that week!), and I enjoyed reading the articles. But some people made a fuss about them. I never knew for sure, but I believe Prabhakar Ragde wrote them.

When I was editor, I was lucky that there was a group of people who were producing interesting stuff. I was sorta proud of being the person who helped put everything together and made sure that the paper got done.

"In mathNEWS, we've seen a huge mix of serious and silly articles (...) Does this wide breadth of content match mathNEWS when you were around? Are you surprised by what it's like now?"

I took a look just now. OMG, **mathNEWS** looks so professional now (of course, everybody's got Adobe everything now, which helps). And the issues are 40 pages long! Wow! It looks like there's a lot of real content now. I haven't had a chance to read it yet, but the mix looks about the same. I will read some of it when I get a chance!

"Do you have any interesting stories, photos, or memorabilia from your time in mathNEWS?"

Not really (except for the story about the **mathNEWS** co-office, see below). There were a couple of extremely eccentric people involved with the paper off and on, but I don't want to mention their names in case you track them down and interview them :-) No photos or memorabilia.

"Did mathNEWS have its own office? Where? What was it like?"

Oh boy. **mathNEWS** had office space on the third floor of the math building. It shared the space with Antical, which was a program that enabled students to rate their professors (now, of course,

you can do that online). How Antical worked was, at the end of term, students were given a piece of paper to write review comments on, and the comments were placed in envelopes, one per class. The Antical editor was very disorganized and, by the end of the fall 1981 term, the floor of the mN/ Antical office was covered in Antical envelopes and the editor was actually living there (I guess he had a dispute with his roommates or something). The office smelled very strongly of unwashed human and clothing. I never went there. Antical was terminated shortly after that.

"Have you kept track of mathNEWS at all since graduating?"

I looked at it occasionally for a bit (I wrote something up for mN's 25th anniversary!), but not in a long time until now. I am awed by the professional-looking appearance (again, probably thanks to Adobe products) and by the sheer quantity of content. I should take a look at it sometime soon.

"Is what you're doing today what you expected when you graduated?"

No. I expected to be a computer programmer but found after a while that I didn't like writing software for a living. I became a technical writer, and that's what I am now.

"How do you look back on your time in mathNEWS?"

I enjoyed it, but it was a long time ago :-)

"How has life been for you after university?"

Life has treated me well, thanks for asking :-) Very happily married; gainfully employed; most body parts still working more or less according to original specifications. Though somehow I have become 62 years old - how did that happen?

"In retrospect, do you think past-you would've imagined that mathNEWS would live to see its 50th anniversary? Why? Do you think it will live to see its 100th?"

The world has changed so much in the last forty years, but **mathNEWS** is reassuringly very much the same. I'm not surprised that it made it this far. As for 100: if civilization isn't destroyed by cataclysmic climate change or overrun by angry populists/authoritarians, mN will make it to 100 for sure.

"Would you want to be contacted for mathNEWS' 100th anniversary?"

Given that I would be 112 years old then, you would likely need to use a Ouija board to contact me.

Dave Till

N reasons why the FX-991 MS series of calculators should be approved

* I asked
* able to do the tasks of a typical D-tier scientific calculator
* can do calculus
* can do matrix computation
* can do computations in C
* has a built-in quadratic equation solver
* has a built-in cubic equation solver
* has excellent UX; easy to enter and edit calculations
* is not the imposter
* knows where it is
* is real, like The One **Piece**
* is lighter than your mental burdens
* will never give you up
* will never let you down, especially in the most desperate of moments (STAT exams I'm looking at you)
* actually has a chance against the legendary TI-84 series
* has 403 functions and the revolutionary Natural Textbook Display™
* [FX-991 ES PLUS C] is the new kid on the block and is shaking up the maths world™
* $\int \ln x \, dx = x \ln x - x + C$

AHpache

The Axe Forgets

// CW: Abuse

The axe forgets, but the tree remembers. This saying talks about the one-sided nature of trauma. For the axe, it's just another day. Just another swing. For the tree, it is much more. A severed branch. A vicious gash. The axe continues as it were, while the tree suffers alone.

They didn't know what they were doing. They didn't know how much it hurt. They were trees carved into axes, and they were fine, so why wouldn't I be? Honest mistakes are to be forgiven. They didn't know. But isn't there a line to be drawn? Isn't there a point where mistakes are simply not tolerable? Is it too much to ask that a parent loves their child?

I remember many things. I remember pain. I remember lies. Screaming. Crying. Fear. Anger. Hopelessness. I remember suffering. The wounds are still fresh. The pain still flares. A constant reminder.

Now they say they care. But it is far too late. They have cut the leaves that give them shade. I am marred, and an axe I cannot love. They say blood is thicker than water, but sap is thicker than blood.

As my branches litter the soil beneath, as my exposed heartwood decays, I stand here, with a silent plea.

Sometimes I wish the axe would fell the tree.

treeture_f

When the Identity Transform Does Something

It ain't math, but it's C++

Yeah, yeah, you read the title; you know what's going on. I'm doing bad on my pledge to stop writing about this godforsaken language. Well, what's done is done; in return, here's a little snack for you to chew on. Get a load of this:

```
template<typename T>
T add(T a, T b) {
  return a + b;
}
// ...
cout << add(3.14, 8) << endl;
```

"jeff, have you lost it? There can't *possibly* be anything interesting in this snippet of code! It's dead simple! Your snack lacks flavour and texture; it is bland!"

Fuck you! I make the rules around here, and I say it's interesting. Why? Because it's bad. *Really bad.* The "your-program-won't-compile" kind of bad. Cringe! And you know what? *GCC says I'm right.*

```
error: no matching function for call to `add(double,
int)`
```

Well... Well? Well, this is disappointing. Admittedly, **3.14** and **8** *do* have different types, and this is evidently confusing our poor, faithful compiler. Sure, we *could* just change that template function to take two distinct parameter types. But what's the fun in that? That'd mean a quadratic number of overloads for the compiler to potentially consider and, really, one of these parameters ought to just get converted to the other's type, right? It should *just work.* You might also feel inclined to argue that we should just swallow our pride and call add<**double**>(**3.14, 8**). To that, I ask: where's your spirit? After all, it's all about making the compiler figure these things out for us. Taming it. *Domesticating it.* No; I won't have this. We need to take care of this.

Humour me for a moment; let me reformulate our code just a touch differently:

```
template<typename T>
struct type_identity {
  using type = T
};
template<typename T>
T add(T a, typename type_identity<T>::type b) {
  return a + b;
}
// ...
cout << add(3.14, 8) << endl; // prints 11.14
```

This code is equivalent to what we wrote before and hahahaha I'm just kidding, it actually works now, and it gives us exactly what we want. "Are you serious?" Yes. I literally applied the identity transform to a type and now it's *fine.* T evidently gets deduced as **double** and so **8** gets converted from **int** to **double**. What the fuck? Now, I don't know about you, but as a distinguished(?) mathematician at this respected establishment, my *one and*

only tether to reality has been that "the identity transform does nothing". And here it is, in fact, *doing something.* Evidently, we have a broken language on our hands.

Aha—not quite.

You're rusty on your ISO/IEC 14882:2020(E). That's right: we need to talk about the C++ standard.

Well, okay, I'll narrow the scope of our discussion a bit. Instead, let's talk about **template argument deduction.** So, while we're used to it being the case that *every* argument to a template function somehow participates in type deduction, *this is not the case.* Indeed, there exist contexts in which a given value will *not* be considered in the type deduction process, and the compiler will instead defer consideration to the other values given. These contexts are called *non-deduced contexts.* And while there are a number of these contexts (which you can find on cppreference or in temp.deduct.type in the standard), the one we care about is this one:

"the nested-name-specifier of a type that was specified using a qualified-id".

Let's speak the same language: a *nested-name-specifier* can be a few things, but *generally,* if you have something like A::B, then we call A:: a *nested-name-specifier;* moreover, we call A::B a *qualified-id,* and B an *unqualified-id,* because it's not "qualified" with a *nested-name-specifier.*

Now, let's re-examine what we wrote earlier:

```
template<typename T>
T add(T a, typename type_identity<T>::type b) {
  return a + b;
}
```

Well, there's the kicker. Here, type_identity<T> is a *nested-name-specifier,* so type_identity<T>::type is a *qualified-id.* The relevant part is that our T showed up on the left-hand side of ::, the scope resolution operator. In performing this "identity operation" on the second parameter, we've wrangled the rules of the language to induce a non-deduced context, completely counting out the second parameter from template argument type deduction. With this phenomenon now clear, you might think that T would get deduced differently in add(**3.14, 8**) than in add(**8, 3.14**). And you'd be right, because the latter will deduce T=**int**, so it'll produce **11** instead.

Of course, this identity transform exists in the language as std::type_identity from <type_traits>. But you didn't need me to say that.

jeff

Shoutout

gridword

Signal Intrusion

gridcomment 151.1

We interrupt your regularly scheduled gridWORD for a gridWORD where the gridMASTER makes the gridWORD and a hapless editor writes the gridCOMMENT because we didn't get one. To the new readers out there, the gridWORD is a crossword-adjacent puzzle, said to manifest itself once fortnightly in randomly selected issues of **mathNEWS**.

It ain't a crossword, got it!? I still shudder thinking about the last Canada Day gridWORD. If you solve the gridWORD by 6pm on February 6th, send your solution and gridQUESTION answer to **mathnews@gmail.com** with a pseudonym; if the gridMASTER is pleased, you shall be acknowledged in next issue's

gridCOMMENT. This issue, the gridQUESTION is: "what are you looking forward to in fifty years?"

evaluatED

ACROSS

1. Small bank, often
2. James Cameron flick
13. A strong protest from a large number of people
14. Transforms into
16. Acting governors
17. How I will hide my depressing e-hournal
18. Acts sleepy
19. Bummed out
20. Grassy area
21. A false or ambitious claim
24. Arose
26. Golf peg
27. Poet's "below"
29. Only a spoonful, say
30. 2n+1 for some integer n
31. To have been cut down by a curved blade
33. Sad ending?
34. Many an action movie villain
36. Predict the future (I am sad) using crystals*
39. Zen enlightenment (Japanese term)
40. Elbow's site
43. Farmer's concerns
45. He ____ away because of nervousness
46. Spelling contest
47. The unique piece of tissue for those female born
49. What I may use to paint my feelings (sad)*
51. Stars and Stripes land
52. "___ never work!"
54. Some shirts
55. A unique trait to males, rhyming with stuffie (blush emoji)
57. Be successful
59. Beach pest
60. Persistently ignored or rejected
61. Flat contracts
62. Many a snake

DOWN

1. Made dim
2. Cause of hay fever
3. Catkin
4. "Balderdash!"
5. Director's cry
6. "48___"
7. Brother of Cain
8. Goddess of love
9. To believe something as correct
10. The onion browser
11. Enzyme to break down your ramen noodles
12. Shows remorse
13. Invest in sadcoin, it's a ____-currency like bitcoin*
15. Levels
19. Formal engagement to be married
22. Closes in on
23. Israeli natives
25. Deliver a tirade
28. Brave
32. Of greater concern
34. To clack away
35. The one who rolls balls uphill eternally (thanks zeus)
36. Skiing maneuver
37. Some may be blue (like my tears)*
38. Salad ingredient (green)
40. The word is abilene (this one just fit, idk what to give for a clue lol)
41. Return to a normal state of health
42. Slipped (up)
44. Smells something
48. Subway entrance
50. Meat cuts
53. Spanish laws
56. Kind of approval
57. Fire remnant
58. When squared, a type of distribution

mN Calendar

SUN JAN 29	MON JAN 30	TUE JAN 31	WED FEB 1	THU FEB 2	FRI FEB 3	SAT FEB 4
	Course selection period begins		"Buy Editors Sixteen Kilograms of C4" Day	Groundhog Day	Final exam schedules released	"Create a Vacuum" Day
SUN FEB 5	MON FEB 6	TUE FEB 7	WED FEB 8	THU FEB 9	FRI FEB 10	SAT FEB 11
	mathNEWS 151.2 production night	Course selection period ends Santa Claus' Birthday	Cycle #1 interview period ends	Cycle #1 employer rankings available Beginning-of-term Exams	Cycle #1 student rankings due mathNEWS 151.2 hits the streets	

mathNEWS -financed by but independent of Mathsoc
well, here it is--after a solid twenty four hours staring down the computer and bending software to my will, the start to the long-prophesized 50th anniversary volume is here. oh, almost forgot-- i'm evaluatED! after writing here for--what is it now, 4 years? oh god--i'm mathNEWS' latest ~~victim~~ hire on the editorial team, and right on the heels of escaping mathsoc's vicious clutches... someone's gotta help keep this rag running once the rest of the batch graduates, right????? (turns out trial by fire is a good training technique after all...) it's been many hours spent in the office reading through archives-- getting to see generations of mathNEWS flow in and out, seeing the culture and content shift a little over time. but you know, i've talked with so many past editors (and even met the oldest one in-person), and the conclusion i've come to is that, past the superficial, mathNEWS hasn't changed all that much. it's always had the same spirit. it's always been "not much math, and even less news." mathNEWS will always be mathNEWS and, in prabhakar's wise words, "mathNEWS will never die." our question to our writers this issue was "what would you bring back from 50 years ago?" and with that, we triumphantly were: Golden ("The house prices"), __init__ ("Roe v. Wade"), snackimal ("the economy"), boldblazer ("Zellers"), cutlet (5-year old asbestos from the walls of MC"), normalparameters ("Watergate"), yalevoylian ("Augusto Pinochet's coup d'état in Chile"), Andoiii ("big boi space exploration"), Xx_420SonicFan69_xX ("Smallpox"), someBODY ("Kinda hungry rn so probably a sandwich"), 别 ("not smallpox"), wewlad ("Chile before Pinochet did the CIA-aided coup"), creature_f ("1973"), tendstofortytwo ("the golden age of fucking around and finding out in the computer hardware and software industry"), AHpache ("Grumman F-14 Tomcat"), UW Unprint ("As many bearer shares of Berkshire Hathaway as I can buy (19 percent annualized return, baby)"), Shahabee ("Cheap, affordable housing"), sherp ("cold war math funding"), molasses ("Optimism"), manganese ("not racism"), aaqsr ("The original C language!"), Finchey ("Tricky Dick! Those jowls... Sexy!"), aphf ("the 70% of wildlife populations that have disappeared since 1970 lmamo"), Lars Nootbar ("The Second Cod War between the UK and Iceland"), jeff ("Trigraphs??!??!"), blinchik ("disco disco disco") Clara "clarifiED" Xi ("Che Guevara and Debussy to a disco beat"), Evan "evaluatED" Girardin ("the Honeywell 6050"), Daniel "distractED" Matlin ("John Peebles"), Ryan "uknightED" Chow, and Kevin "god≸peED" Trieu... why don't YOU drop in and volunteer sometime??????

**resources used $ 51.49,   used to date $234.16= 47%
**time sharing off at   5.555   on 01/27/23
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