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"WHAT APRIL FOOLS' PRANK ARE YOU PLANNING TO PULL?"

Hello again, dear reader.

By now, you may have realized that there is something subtly different about this issue. We're glad you've noticed; you're witnessing a major event in mathNEWS history, and when it comes to big reveals like this, the more eyes the merrier.

You see, needless redesigns are all the rage right now. I mean, is there a major tech company that hasn't undergone some sort of branding refresh or website redesign in the past six months? Google, Bloomberg, Slack, Shopify—the list goes on and on. Meanwhile, mathNEWS hasn't seen a change since 2017. TWENTY SEVENTEEN! That's two years ago. Do you know how excruciatingly long that is? It was time for a redesign, and we're proud to reveal it here.

That's right, y'all. Despite what the timing may lead you to believe, this isn't an April Fools' joke. This is permanent. We're rocking Comic Sans and crappy handwritten fonts like it's the 1990s, and we dig it. I mean, what isn't there to love about this?

- The professionally matched font selection
- The all-ages-friendly typesetting
- The elementary school vibes—who doesn't love elementary school?

Anyways, I think it's time for some more mathNEWS-y announcements. This issue, we are joined by the wonderful Alice Gao as our featured prof, here to answer your finest questions about pets, Harvard, and iClickers. She also left us a touching article about resilience in the face of failure, which I think many of us can relate to as students.

We're also happy to announce that we successfully received a submission for last issue's crossword! Not only have we redeemed stapLED's hard work and made her happy, we have also managed to avoid itorED's unholy wrath. I count that as a win. Now go do Zethar's crossword.

Oh, and by the way? Comic Sans sucks. April Fools'!

terrified
Editor, mathNEWS

SANDWICH EXPERT	Giving someone the -\$7.50 gift card for Conestoga Mall we won at Over 9000.
UW UNPRINT	Getting matched with a job. They'll never see it coming.
FINCHEY	Staging a coup in Ottawa to overthrow the current government, establishing a ruthless totalitarian state that I rule under martial law. I use our military might to take over and rule the entire world, shaping it in my image. Finlandia. Keep your eyes peeled.
GREG	I'll pour the milk before the cereal.
TILLOW PRINCESS	Fool myself into believing that I belong here.
THEODORE BEAR	The ultimate prank: nothing! They'll never see it coming.
LICENSE2DERIVE	Writing articles for The Iron Warrior. Our editors will never see it coming.
WOLFRAM BETA	Come to work with my underwear on inside out. Gotem.
BBOB	Nothing, I'm not funny anymore.
WATER	Springing my clocks forward another 3 hours so that I sleep at a reasonable time. I'll never see it coming.
WALDO@K3.LE-GASP. CA	Snowday during exams! Either that, or you graduated with a Bachelor of Arts!
BEYOND META	Put a hug me sign on my own back
ZETHAR	Celebrate the start of a new year, like we used to.
CONFUSED	Write April 1 st , 2018 on the board before class starts and see if anyone notices
ITORED	Failing my courses. Take that, myself.
STAPLED	My existence is a lifelong April Fools' prank.
TERRIFIED	An unexpected prank. Or maybe no prank at all.

AUTHOR OF THE ISSUE

Congratulations to License2Derive for winning ~~article~~ author of the issue this time around! We have decided to bestow upon you this prestigious honour for your multitude of high-quality articles, some of which would be worthy for an actual article of the issue if it weren't for the sheer volume of your writing. Seriously, we're drowning in your submissions. Please write less. (Please don't actually.)

terrified

The real April Fools' joke is UofT.

TERRY CHEN, mathNEWS EDITOR FOR WINTER 2019
ALONG WITH ESTHER AHN, JAMIE ANDERSON, MICHELLE ZHU

mathASKS 139.5

FEATURING LECTURER ALICE GAO

SANDWICH EXPERT: HOW DO I GET INTO HARVARD FOR GRAD SCHOOL?

The way you framed your question sounds like you want to go to Harvard for grad school because of its name, which is a wrong way to think about it. The benefit of going to a top research university like Harvard is that you will be surrounded by amazing people, who are intelligent, hard-working, creative, and aspire to make a difference in the world. A top university will provide you with the best environment, the best companions and the best resources to achieve whatever goal you have in mind. After you leave school, the connections you made during your time there will become your network in the future.

If you want to go to a great grad school, here are a few questions for you. Why do you want to go to grad school? How would the grad school help you to realize your career and life goals? Have you tried research at school or within a company? Do you enjoy it? In which area would you like to perform research? Regarding research areas, have you decided on one particular area or are you willing to explore? Who will you ask to write recommendation letters for your grad school applications?

Come to my office hours or send me an email to book an appointment. I am happy to talk to you more about grad schools.ev

SANDWICH EXPERT: HOW WAS YOUR CONFERENCE?

SIGCSE 2019 was great. It was -25 degrees in Minneapolis, so I didn't go outside of the hotel, and I cannot claim that I've visited the city. However, I learned about a cool active learning technique called POGIL, for which students work on activities in groups to discover and learn concepts. I saw some fun and effective programming assignments created by instructors from other universities. I participated in a discussion on how to improve our office hours, which was very fun and liberating. Finally, I connected with old friends and met some new ones. Overall, it was a blast, and I am eager to start working on some education research myself.

TERRIFIED: HOW DO YOU FEEL WHEN YOUR STUDENTS CALL YOU "GAO LAO SHI"?

It stills feels surreal when I hear people call me by my last name. It makes me feel a bit old. It also reminds me that I have come such a long way to be where I am today. It makes me feel respected, yet it reminds me of a terrifying sense of responsibility.

LICENSE2DERIVE: WHAT IS YOUR BEST ADVICE FOR CS MAJORS?

I can think of so many. Let me defer this to my article.

CIX: WHAT FEELINGS DO YOU FEEL WHEN YOU LISTEN TO "DANCING QUEEN" BY ABBA?

"Dancing Queen" makes me think of the musical Mamma Mia. I loved the ending of the musical when they sang Dancing Queen as a celebration. I also love several other songs in that musical: "Our Last Summer", "Slipping Through My Fingers", and "The Winner Takes It All." They express such powerful and beautiful emotions. I recently got back to playing the piano to learn to make music myself.

SEE YOU LATER: WHAT ARE YOUR FEELINGS TOWARD THE GEESE?

I keep a respectful distance from them. I first learned about Mr. Goose during my first term teaching at UWaterloo. We extended the deadline of an assignment and students started a thread of "Thank Mr. Goose" on Piazza. This thread confused me a lot as I kept wondering: Shouldn't the students thank their instructors for extending the deadlines rather than thanking Mr. Goose? =)

STAPLED: DO YOU FEEL ANY CAMARADERIE WITH ALICE (IN WONDERLAND)?

Yes, although I have never read the story in full or watched the movie. When I moved to Canada, I had the rare opportunity of choosing an English name for myself. I picked Alice, but I could not remember why anymore. The early days of being in Canada were all a little bit hazy.

EPSILON SCREWN: DO YOU LIKE ELLIOTT SMITH (AN AWESOME SINGER-SONGWRITER)?

I don't know him at all. Care to recommend a song that I can play at the beginning of my class?

ME: DO YOU HAVE ANY PETS?

As an undergrad, in a spur of the moment, I bought a pet hedgehog and named her Ebbie. Ebbie was fascinating—sleeping during the day and shuffling in her bin at night. She could curve into a complete ball of thorns when scared, and she seems terrified all the time. However, you can pick her up by scooping your fingers under her soft belly. When you put a live cricket near her, Ebbie suddenly turns from a slow-moving creature to a fierce hunter, and she can grab the cricket in one swift move.

Shortly after Ebbie arrived at our home, she got sick and stopped eating anything that I gave to her. I was worried sick! I took her to a vet who gave her a shot of some sort. I fed her wet food using a syringe for days until she started eating again.

When I left UBC for Harvard, I had to give Ebbie away. It was the saddest thing I had to do. After that, I decided that I would not get another pet unless I can commit to being with them for their entire lives.

THEODORE BEAR: HOW DOES UW COMPARE TO HARVARD?

I'd rather not compare the two places. They are both unique and are not comparable in any sense.

UW is my current home. I have a fantastic job, and I get to work with brilliant and fun students. This place has helped me to find happiness, peace, and fulfillment. I can wait to learn more about what this place has to offer.

Harvard was a place packed with wonders. I can still picture the glorious red brick buildings, which have quite a style. I remember staring at the top of the memorial church over the blue sky and feeling thankful for spending time in this place. I remember the constant crowd of tourists around campus and browsing the animal specimens in the Harvard museum. The six years I spent there were full of waves of laughter and frustration. I made friends with many intelligent people and together we went through the ups and downs of life. I remember playing board games every Wednesday night and walking to Porter Square for dinner in the hot summer evenings. The best thing about being in a great university is that it opens your eyes and offers you infinite possibilities for the future.

LICENSE2DERIVE: WHEN WILL YOU BE SWITCHING FROM IClicker TO KAHoot?

I have never tried it, and I would love to try it. However, what is the benefit of Kahoot over iClicker other than that it makes the questions more like games? Is it possible to grade the questions for marks using Kahoot?

SANDWICH EXPERT: ARE YOU VEGAN?

Nope. I am very much an omnivore although I do like vegetables much more than the average person. My mom was very good at making delicious dishes using plain vegetables. That's likely how I developed a fondness of plain vegetables. Many people also have told me that I have a higher tolerance for bland food than other people. =)

TILLOW PRINCESS: WHERE IS YOUR FAVOURITE ON-CAMPUS BATHROOM LOCATED?

Umm.. I don't have a favourite one. Probably the one closest to my office? I think many UW buildings require serious renovations.

DAWDLING: WHAT'S YOUR FAVOURITE ESOTERIC ALGORITHM?

I'm not sure if I can identify a favourite esoteric algorithm. I'll share two algorithms that I like from the introduction to Artificial Intelligence course that I took many years ago. I enjoy learning about the Branch and Bound search algorithm, which maintains upper and lower bounds on the costs of the paths found and use these to prune the search tree. I also like the value and policy iteration algorithm for computing an optimal policy for a Markov Decision process.

SANDWICH EXPERT: IF YOU COULD BE ANY IClicker FREQUENCY, WHICH IClicker FREQUENCY WOULD YOU BE?

BA for the Best version of Alice. ^_^

DEALING WITH FAILURES & BUILDING RESILIENCE

profTHOUGHTS 139.5

Where do I start? When the editors asked me to write an article for mathNEWS, I was not sure what wisdom I could offer to UW students. The UW students I know are brilliant and hardworking, but most of them seem way too stressed out for many different reasons. I decided to offer some of my thoughts on dealing with failures and building resilience. Since I am not an expert on these topics, I will focus on sharing some of my own experience and stories.

I am interpreting the word "failure" in the most general sense possible. For students, failure may include failing an assignment or an exam, failing to get a particular grade in a course, failing to get an interview or a job offer, failing to transfer into CS, etc. In general, failures can refer to any setback and difficulties you encounter in any aspect of your life. We may fail to meet the criteria set by others, or we may fail to meet our expectations.

It is difficult and unpleasant to deal with failures, and we all want to do our best to avoid them. When I was an undergrad, I didn't have a strong sense of what failures were like. I sailed through the courses I was good at, and I brushed aside the classes that I did not excel in. I never imagined one day that things would become difficult, and they did. Everything became so much more difficult during graduate school, and I struggled with everything—finding a research topic, giving talks, writing papers, etc. When I look back now, graduate school represented one of the most challenging periods in my life. At the same time, it was also a time in which I learned a great deal and grew tremendously as a person. If I could go back in time, I would go through it all over again.

My graduate school experience taught me that failures are common—way more common than I think, especially in research. The majority of the research ideas and projects

fail, and the majority of the paper submissions get rejected. An essential trait for a successful researcher is to be able to deal with failures and rejections gracefully, to learn from your failures and to move on. If you don't do anything, you will never fail. Failing at something means that you are trying something new and pushing your boundaries. It is a great idea to put yourself out of your comfort zone once in a while. If you do so, you may be surprised by what you learn about yourself.

Evolutionarily speaking, we are wired to take failures more severely than successes. After all, in the "old days," if we mistake the advance of a lion for the rustling of leaves, we might get eaten by the lion. Today, our failures do not have such severe consequences anymore. However, because of our adaptations, failures make us feel particularly miserable, and we focus so much of our effort on preventing them.

Since most UW students were overachievers in high school, you likely believe that failures are terrible and we should avoid it at all cost. I will argue that experiencing a certain amount of failures benefits you as a student and as a person. First and foremost, experiencing failures helps you build resilience. It enables you to recognize life's challenges and deal with the outcomes gracefully, no matter good or bad. There are and will be many challenges in your life. As a student, you are mostly worried about failing a course or not getting into your desired program. Later on in your life, you will encounter many more challenges, and some outcomes will be heartbreaking. According to Google, "resilience" is the capability to recover quickly from difficulties. While we are not born with resilience, we can build resilience through our experiences and our effort. With enough resilience, when you fail at a challenge, you will not readily give up on the challenge or on life itself. Instead, you will go through the trials and emerge as a stronger and better person than before.

When you have not gotten used to failures, you are as brittle as a china doll. One blow from a minor failure will smash you into pieces. I was such a china doll myself. I grew up excelling at almost everything I tried, and I got used to succeeding at everything and hearing praises from everyone. As a result, I had a terrible time dealing with any setback and failures. Let me share a few of my stories. When I was in primary school, I wanted to learn to swim. My mother put in a great deal of effort to register me in a swimming class. However, after the first class, I decided to quit. The class was at 7 am in an outdoor pool, and the water was freezing. My mother would not let me give up so readily. She talked to me and said that "if you always quit on everything like this, you would never succeed at anything." I sobbed hysterically that night, but I ultimately completed the class and learned to swim successfully. This experience taught me that it is important to persevere through difficulties. When I was an undergrad, I was still not very good at dealing with failures. When I struggled in some courses, I did not realize what was happening. I felt sad and ashamed that I could not understand the

materials or could not perform the assigned tasks. My first instinct was to hide and ignore my problems and to pretend that it was not happening. I did not know how to seek and obtain help from friends and professors. Things got worse during my last year of graduate school. Even though I had improved tremendously in many aspects, I was still nervous and terrified that I would not be able to get a faculty position at a university. I was so worried and stressed out that I had a hard time getting out of bed. I ended up spending days inside my dorm room ordering food deliveries. In retrospect, I was severely depressed, but I did not know it at the time. In fact, depression is widespread among graduate students.

I hope my story has not depressed you as well. By telling my story, I want you to realize that nobody is born with the ability to handle failures gracefully. Nevertheless, we can build resilience with practice precisely as how we build up muscles in our bodies through exercise. Failure is not a permanent black mark on your record. Instead, it presents you with an opportunity for growth and improvement. It is saying to you: Hey, you have a chance to do better at this. Would you like to try?

Last but not least, let me share some advice for dealing with failures. First, recognize your problems. This requires you to become aware of your own feelings and admit to yourself that you are upset because something did not go as you expected it to. Recognizing your problems is the first step towards solving it. Second, find a support system and do not do this alone. Once you realize that failures are common and everyone struggles with them, you should not be ashamed or afraid to talk about it with your friends, your professors, and your parents. The friends you make at university will become your network in the future. Make lots of friends and lean on them for support. Third, seek help. For emotional support, I highly recommend reading the book "Option B" by Sheryl Sandberg. The book will open your eyes to the possible hardships and adversities that people have faced and have survived. It will also teach you the right attitude to deal with difficulty in life—it is not always your fault, it will not affect all areas of your life, and it will not be permanent. We all have to go through the emotional turmoil after experiencing a failure. Allow yourself to feel the emotions and let them pass. After that, gather all your strength to face the day. For strategies to do better in school, ask your TAs and your professors for help. We have lots of ideas, and we are dying to share them with you. I've always believed that you can accomplish anything if you are willing to do whatever it takes.

A final word on this topic: Life is precious and a gift. No matter what happens, the sun will rise and tomorrow will be a new day. Work hard, persevere and cherish the opportunity to be alive!

Alice Gao

HONK HONK; THE ALL-A FIELD GUIDE TO THE GOOSE-BLIND AND CLUELESS

So, spring is upon us here at UW! The temperature is up, the snow is down, and the e-scooters will be back in no time. But, that does mean one other thing. The geese. Although they have been sparsely present over the winter, they've returned with a vengeance over the past couple weeks. So, for those of you who are unfamiliar with the inner mechanisms of a goose, how do we stay safe? How do we avoid a "wild goose chase" with a real, live wild goose pursuing you? Well, with these few quick tips, I'm sure you'll be well on your way to safely avoid the hazard of a bird preparing you for its next meal.

1. AVOIDANCE

This tip is rather self explanatory. When seeing a group of geese ahead, a good first step is determining if this is the only viable route to your current destination. If the answer is no, perhaps the other route is more appropriate. Cutting through buildings and grassy areas, or across paths are good ways to quickly arrive at your destination without being declared dinner by the horde.

2. ACT NATURAL

Suppose your route requires you to come in close contact with a bigger group of geese, no way around. That's fine, you can still make it out in one piece. The thing to remember with these geese is they've been living on this campus for over 60 years now (that's about eight generations of geese) and they've been around the city even longer. These geese have come to expect us walking along the paths, like robots between our classes, for a really long time. They know, to a point, what we're going to do when walking the paths. Just keep your head down and walk straight by them, you shouldn't experience much resistance from the average goose.

3. APPEASEMENT

So, suppose that the first points have failed. You tried walking past the geese like a robot, but one has singled you out and is getting aggressive. They usually denote their aggression by approaching you and moving their head back, then raising it while hissing or honking at you. At this point, your best bet is to give them what they want—space. Likely, you're too close to what they consider "their area", meaning that you should back off. Remain facing the goose, backing away slowly enough not to surprise it, but quickly enough to ensure you can get away safely. You should also remain calm so as not to further aggravate it.

4. AGGRESSION

And you've now found yourself in an unfortunate position, given you've reached this step. A goose has singled you out and is giving you a look that can only mean they've told

their goose family to fire up the barbecue at home, because they're having student for dinner. This means you have to show this goose that you're the stronger man/goose, and that you could be having it for dinner if you weren't so generous. This means you need to switch to an aggressive nature. Make yourself appear as large as possible, perhaps by waving your arms and yelling at the goose. With the average human standing about twice as tall as the average goose, this shouldn't be difficult. If he keeps coming, within attack range, then you'll have to smack it a couple times on the bill to assert dominance. This should be enough to deter the attacker. However, the emergency fifth step is included as a bonus, just in case he still thinks he can take you.

5. AWAY WITH THE GOOSE

This step is for dire circumstances only, and is not recommended for anyone to perform just for fun. If a goose really has it out for you, there are many ways it can attack. Geese either nip you with their bills, smack you with their wings or scratch at you using their knives talons. The most effective method to avoid both of these outcomes is the following: first, to avoid being nipped, you should try to grab at the goose just below its head, at the top of the long snaking neck. Then, to avoid the other attacks you should try to hold the goose at arm's length. Now, to finalize the defense, you should swing yourself around, like the Olympic Hammer Toss, and throw the goose as far as possible away from you. This disorients the goose, giving you effective time to **RUN LIKE HELL AWAY**. Try to get inside the nearest building and call for some help.

Also note, if you are in any way injured from a goose attack, be sure that you contact medical professionals ASAP, as there could be some nasty infections or other consequences if not treated properly.

So that about does it for nature defense in this issue of gooseJokes mathNEWS! Best of luck for those of you re-adjusting to the lifestyle of avoiding goose strikes in the foreseeable future.

Fruitboy

I put this here just so I could fill this column.

A TIRED mathNEWS EDITOR

THE RACE FOR PRIME MINISTER

The Canadian federal election is on October 19th, only six months away. As the Canadian Constitution says:

Hot takes about an upcoming Federal Election may be released no sooner than six months before said election.

—CANADIAN CHARTER OF RIGHTS AND FREEDOMS, s 420, PART I OF THE CONSTITUTION ACT, 1982

So, it's time for a rundown of who's running to be our next Prime Minister.

JUSTIN TRUDEAU: (LIBERAL PARTY)

Platform: Justin Trudeau is hoping no one remembers his 2015 campaign so he can resubmit it without violating Policy 71.

Pros: As the former Prime Minister, Trudeau is responsible for previous government policy.

Cons: As the former Prime Minister, Trudeau is responsible for previous government policy.

ANDREW SCHEER: (CONSERVATIVE PARTY)

Platform: Andrew Scheer is hoping to direct the campaign away from the divisive and widely disliked Andrew Scheer.

Pros: Scheer combines the energy and excitement of Stephen Harper with the infectious charisma of Stephen Harper.

Cons: He risks being overshadowed in the media by his far more popular dimples.

JAGMEET SINGH: (NDP)

Platform: Singh is running on a truly visionary, ideas-based platform that will never be implemented.

Pros: Jagmeet Singh could be the first Sikh to lose a federal election.

Cons: The NDP platform is simply too radical for Canada, until the Liberals steal it.

ELIZABETH MAY: (GREEN PARTY)

Platform: Elizabeth May is running on a bold, environmentally friendly plan that will also never be implemented.

Pros: Her power over nature allows her to strangle enemies and non-voters alike with vines and stems.

Cons: May foolishly assumes people care about the environment.

MAXIME BERNIER: (PEOPLE'S PARTY OF CANADA)

Platform: Maxime Bernier is running to appeal to voters who feel that the Conservatives do not pretend to listen to them enough.

Pros: Bernier offers another option for people tired of voting for parties that might win.

Cons: Forces reporters everywhere to add one more section to article templates and bar graphs.

UW Unprint

SUGGESTED RESALE PRICES FOR INCOMING CUSTOMERS

This coming Fall means a fresh wave of naive customers first-years are going to arrive. I know we all got textbooks, iClickers, and other school materials left over from a previous term that we can pass on to them, at a unreasonable scammy price.

After running some simulations in a machine learning quantum quantitative financial AI supercomputer, here are the suggested resale prices for your inner capitalist:

iClicker: If n is the number of working buttons, and b is the number of working batteries, and d is the number of dead batteries, you should resell it at a price of $\$(n \times 10.00 + b \times 3.14 + d \times 3.00)$.

Orientation Tie: If your tie is from year y , resell it at $\$(y-2019) \times 1000.00$.

Textbook: If p is the number of fully intact pages, resell at $\$(p \times 2.72)$.

If the cover is intact, then charge an additional $\$27.18$.

Course notes: If the year your course notes were published is y , resell it at $\$314.16/(y - 2019)$.

OSAP: Sell your OSAP at ten times the amount, since it's so much rarer now.

License2Derive

LET APRIL SHOWERS BRING MAY FLOWERS: IT'S HOROSCOPE TIME!

A BONUS HELPING OF ELECTRIC LIGHT ORCHESTRA SONGS AND LUCKY NUMBERS NEVER HURT ANYONE, RIGHT?

Hello, darling. The end is nearly upon us! The end of what, you ask? Well, we've got the end of winter, the end of classes, the end of Volume 139 of mathNEWS — everything but the kitchen sink's coming to an end! Ain't that just the way? But let's not waste our breath meditating on the inexorable passage of time, lest we only depress ourselves. Instead, why don't we look ahead to what April has in store for us? Come on and sit shotgun in my flamingo 1959 Chrysler Windsor, and let me take you on a joyride through Zodiac Town. Let's race down Astrological Avenue as we listen to the tune of ELO's *Greatest Hits* on repeat, singing along to all of our favorite tracks with gleeful abandon. With blue skies back on the rise after they've been hiding away for so long, you know what time it is. Oh yeah. It's horoscope time.

ARIES (MARCH 21-APRIL 20)

Hi Aries! HAPPY BIRTHDAY! This month is YOUR month and I'm SO pumped for you! Can't you tell I'm excited!? Lemme just calm down for a second. Okay, I'm good. If I were to describe your April in one word, it'd be "fortunate". For starters, I sense a not-insignificant financial windfall coming your way before the 17th, when Mercury enters Aries. Keep your eyes peeled! Many fortuitous occurrences related to other aspects of life, from personal relationships to physical health, are guaranteed to cross your path multiple times this month. This April will be a karmic harvest long, long in the making. Do remember to stay grateful, but don't hinder your own happiness either!

Your lucky numbers are 3, $\arcsin(x)$, and 101001101. Your lucky ELO song is "One Summer Dream".

TAURUS (APRIL 21-MAY 21)

Hey there Taurus! If your birthday happens to fall sometime before May 1st, come over here and lemme give you a hug (insofar as I can give you a hug through a few lines of laser-printed text on a piece of paper... It's the thought that counts, right?) and some early birthday wishes! This April's gonna be all about self-reflection and improvement, thanks to lonesome Pluto doing its retrograde moonwalk across the cosmos. Introspection is a lonely road to wander, but it's an important job that needs to be done. I guess the constellations just chose the month of April to do it. You may be tempted to lean on others and ask for their advice, but remember that the only judge of your character that matters in the end is you.

Your lucky numbers are 4, $\tan(x)$, and τ . Your lucky ELO song is "Confusion".

GEMINI (MAY 21-JUNE 21)

Hey, Gemini — I got news for you. You're a shrewd and sharp-witted guy, and you've got no qualms with relying on yourself if need be. I admire that about you. But, at the risk of dampening the mood, I have to deliver you a warning for this April: the retrograde of Jupiter begins on the 10th, which spells sinister omens since it's the ruling planet of Sagittarius, your sign detriment. A stroke of bad luck may befall you partway through the following month, and you might not be able to handle it all on your own. There is no weakness or shame in asking for help. I promise you: there'll always be someone who'll be there to catch you if you fall.

Your lucky numbers are -1, 69, and $\pi^2/121$. Your lucky ELO song is "Tightrope".

CANCER (JUNE 22-JULY 22)

Cancer! Cancer! I'm so excited for you! Wanna know why? This April's gonna be great — heck, it might just be the best month this year so far. You've been through a lot these past three months, Cancer, and mark my words, April's gonna be a healing time. The new moon in Aries on the 5th will put you in a reflective mood for the rest of the month. I encourage you to engage in some introspection; although we'd like to keep past in the past, sometimes history is worth revisiting, as we can learn from our mistakes and prevent them from happening again in the future. Searching for these lessons will help bring you the closure you need and deserve.

Your lucky numbers are 5.1, 47, and e . Your lucky ELO song is "Sweet is the Night".

LEO (JULY 23-AUGUST 22)

Leo! Bro! This April's gonna be all about detoxification for you. Yep, you heard me right. It's time to be cutting out the 'bad' stuff in your life, whether that be bad foods, bad habits, or even bad people. Perhaps you know of one person that you don't have the heart to shake off, despite the fact they're never there when you need them, feed off of you like an emotional vampire, or simply contribute a net negative to your life. Use the confrontational energy of Aries this April to finally spur yourself to action! If you've got ambiguous feelings about someone's place in your life, the clarity of mind that'll arrive in tandem with the full moon on the 19th will give you a hand.

Your lucky numbers are 55, 165BEF2, and $f(x) = x^3$. Your lucky ELO song is "Evil Woman".

VIRGO (AUGUST 23-SEPTEMBER 22)

Yo yo yo, Virgo. This month, you're gonna be on TOP of your game. I mean it! After April 5th rolls around, with the new moon being in Aries and the whole shebang, you're gonna experience a boost in assertiveness and motivation. Take advantage by taking action! Every day, go out and do something that scares you! Start that project or resolution you've been meaning to work on for months! As long as you don't over-commit yourself, success is promised to come. Not that it'll be a problem for you: your sagacity's always been your greatest strength. after all.

Your lucky numbers are 7, $|\sqrt{2}|$, and $\ln(4.21509)$. Your lucky ELO song is "Roll Over Beethoven".

LIBRA (SEPTEMBER 23-OCTOBER 22)

Hey, Libra, do us both a favour and put on some John Paul Young, 'cause I'll tell ya' what: love will be in the air this April! With the full moon entering your sign on the 19th and Venus entering Aries the day after, the cosmos will be absolutely brimming with passionate energy for you to harvest! April will be a time to further your relationships, whether romantic, platonic, familial, professional — everything's up for grabs! Your energy and optimistic outlook will attract newcomers to your presence this month, which makes for a great opportunity to expand your network and explore the world around you.

Your lucky numbers are 1.00, 225%, and δ . Your lucky ELO song is "Strange Magic".

SCORPIO (OCTOBER 23-NOVEMBER 21)

Hello, Scorpio! You can be a pretty stubborn scorpion, you know. I say that in the best way possible — you're determined, persevering in the face of adversity, and resolute in your beliefs. But with the Sun entering Taurus, another headstrong sign, on the 20th, your natural persistence may turn into something quite pestilent. Over the course of the following month, try to keep an open mindset and be receptive to the ideas of others — hear them out completely even if you initially disagree with them. You never know... People can have a funny way of surprising you.

Your lucky numbers are 11, $\sin(x)\cos(x^2)$, and 1976. Your lucky ELO song is "Telephone Line".

SAGITTARIUS (NOVEMBER 22-DECEMBER 21)

Sagittarius, you excellent equine! With Jupiter going into retrograde this month, your naturally competitive spirit is sure to flare up and as shine brilliantly as the reflection of the sun's rays off the surface of QNC at high noon. Take this time to work towards achieving your long-term goals! This increase in productive drive will also be paired with increased impulsiveness, so try to remember to take it slow, and don't count your chickens before they've

hatched. Risk and danger may seem exciting, but this April calls for temperance, and I wouldn't want you to find yourself in a bad situation only after it's too late.

Your lucky numbers are 9, CMXLIII, and $\pi/4$. Your lucky ELO song is "It's Over".

CAPRICORN (DECEMBER 22-JANUARY 19)

Cappy! Hi! You're a no-nonsense person who appreciates a job well done. I love that about you; people close to you can usually count on you to give them a reality check and keep them grounded. But this April has something a little different in store for you, with Saturn going into retrograde at the end of the month. Strange little coincidences will abound throughout April, and you may try to brush them off at first, but soon enough you won't be able to ignore them. Different spheres of your life will collide and intersect with each other in the most unexpected of ways. My advice? Let loose and enjoy the magic of life! Serendipity and randomness can be a beautiful thing.

Your lucky numbers are 100, $144 \bmod 12$, and $f'(x) = ex$. Your lucky ELO song is "Twilight".

AQUARIUS (JANUARY 20-FEBRUARY 18)

What's up, Aquarius? With Venus entering Aries on April 20th, I'll just say that you'll be more wistful than normal next month. You'll grow the desire to be close to someone who is or used to be in your life, but it won't be a happy, dopamine-releasing infatuation. Instead, you'll be left lovelorn, yearning. It'll be totally irrational and it'll definitely hurt. Follow what the heart tells you during this time. Do you feel like sulking? Let yourself sulk. Do you want to cry? Let yourself cry. Don't fight with yourself, dear friend. You'll make it out of April stronger and wiser, I promise you.

Your lucky numbers are -13, ± 52.7 , and $a \ln(a)$. Your lucky ELO song is "Mr. Radio".

PISCES (FEBRUARY 19-MARCH 20)

Hello, Pisces, my fishy friend! This upcoming April will be a time of transition; it'll be akin to the period of time just after you finish reading a really good book where you simultaneously want to read its sequel immediately to find out what happens next AND lay off for a few days to really digest what happened in the first book, you know? Feelings of disquiet will continue to grow throughout the month until the full moon appears in Libra on the 19th, where thereafter they'll start to wane. Allow yourself to dwell in your uncertainty, and don't feel pressured to make any hasty decisions.

Your lucky numbers are 34, ∞ , and ϵ . Your lucky ELO song is "Birmingham Blues".

A REVIEW OF OFFICE POLITICS PD

Warning: This review contains spoilers for Office Politics PD.

Since I'm in Software Engineering, I have yet to take PD1. As such, I was quite pleased when a friend in Computer Science introduced me to *Office Politics PD*, a short browser game available on Learn, which takes you through the workplace experience in a drama-ridden office. Here's a short review of the game.

The game opens to a blue introductory screen with an old-style "How To Play" caption across the top. Some simple backstory to the game is given at this point: you've just begun to work at a new job, and your goal is to make a positive impression. Mechanics are introduced as well—NPCs in the game have an "impressed" metric, which determines the attitude of that NPC towards you. There's no stated goal of the game, other than having to "develop a good relationship with both your boss and your co-workers." Whatever that means. I press the Let's Get Started button.

The graphics of *Office Politics PD* are immediately eye-catching, with their Google Sketchup-style rendering and lack of anti-aliasing. Almost all of the game is told through text. Nevertheless, the little background picture and avatars of co-workers are a nice touch, breathing a little life into the game. The UI fits nicely, looking like a classic visual novel game.

The gameplay is rather like a visual novel, opening with a co-worker, Amy, asking you out to lunch. You have two or three choices to select at each entry, which will lead to different outcomes. *Office Politics PD*'s writing is surprisingly fluid and coherent, drawing you into the drama that unfolds perhaps a little too quickly in the office. This is definitely the game's strongest point—the short stories that you play through in succession don't necessarily connect together too well, but taken individually, are very immersive. I honestly wasn't expecting writing of this calibre in PD, so I was very impressed.

A significant issue in the game is an immersion-breaking lack of connection between events. For example, after ruining a person's day and having their "impression" meter plummet to -25 instantly, you can ask them out to lunch the next day, and the lunch goes on as if nothing happened at all. The cast of characters is also a little too large to be easily remembered in such a short game, especially with their rapid introduction.

The ending of the game is very abrupt. Just as I was getting into the flow of things, the game came to an end and I was left facing a paragraph which lambasted me for my terrible performance, despite having a 43 in "impression" score with my boss. There's no interstitial

screen before the ending screen; the next page simply comes up, and the game is over.

In spite of some issues, *Office Politics PD* is possibly the strongest entry I have ever played in the genre of professional development/educational games. It manages to be interesting and playable, and at times immersive. Most of all, it feels like a game that really tried to be interesting and entertaining while still staying within its professional constraints, which is not often the case when it comes to interactive professional development experiences. I would recommend anyone taking PD1 to take the time to play through *Office Politics PD*, and experience the curious game that is Perhaps you can do better than this writer's "Terrible Performance" final score in *Office Politics PD*.

CC

SLICK METHODS TO SHOW BRILLIANCE AT A CO-OP INTERVIEW

Had a trainwreck at your last interview? Blanked out when asked "[GENERIC SOFT SKILL QUESTION]"? Got triggered when asked "Why are your grades so low?" Failed to implement [GENERIC CODING QUESTION]? Well, here are some slick counters to ensure a more successful interview.

When faced with a hard question:

If you can't solve a question, you need a new one that you can actually do. In this situation, coolly tell them that "this question is too easy" for you and you need another one. This gives you a chance at getting a new, solvable question while showing off at the same time.

When struggling with OOP:

Stuck on a problem with an unfamiliar language? Calmly say that object oriented languages are too easy for you and that to fully demonstrate your skills you're going to have to show off some functional programming. Once they accept this from being awed by your confidences, pull up that DrRacket and use your familiar CS 135 skills.

When faced with a soft skill question:

Tell them the truth with complete confidence: This is UWaterloo, MIT of the North, and soft skills are for silly normies. *Reee.*

License2Derive

profQUOTES

CO 789: DOUGLAS STEBILA

“ ... because there are NO numbers between 512 to 1024.

CS 146: BRAD LUSHMAN

“ I'm going to skip this next topic, because I don't want to do it.

“ GCC, that's a very fine and noble thing you've done, but that's not helping me teach my class.

“ I'm trying to decide, basically, if I want to do this topic or not.

“ I'm going to skip it, because I don't want to do it.

MATH 136: DAN WOLCZUK

“ ... I can see you're all so impressed, you're left speechless. That's great.

“ Fabulous question! What came first, the chicken or the egg?

“ You beat me to it! I like when that happens.

“ I'm a big fan of the game Go. Any game where the rating is in "dans", I'm a fan of.

“ There is a reason — we're not doing this because it's fun.

MATH 138: JORDAN HAMILTON

“ I turned 33 on Tuesday. [Class starts clapping]

“ One of my first acts as a 33-year-old was twisting my ankle. My year's not off to a great start.

“ That's a great question! I should've put it on the midterm!

MATH 146: JUSTIN LAVERDUE

“ Welcome back to Math 146. I'm your host: Ross Willard.

MATH 146: SAM KIM (TA)

“ We're going to do bubble sort, which sounds like Bulbasaur, which is cool because it's my favourite Pokémon.

MATH 146: ROSS WILLARD

“ I don't want any disparaging remarks I made about MATH 136 to appear in mathNEWS.

MATH 148: LAURENT MARCOUX

“ Complex analysis is the study of miracles.

“ Complex analysis good. Real analysis bad.

PMATH 334: BLAKE MADILL

“ This is ugly. I can't live with this.

“ That's better. I can sleep tonight.

“ Irrational numbers are awful, but some are more awful than others.

PMATH 348: BLAKE MADILL

“ What is FixG? Hint: not my weekend rapper name.

“ [on mathNEWS content] I wrote what I wrote and the other stuff is pretty crazy.

STAT 332: NAM-HWUI KIM

“ If my arithmetic is wrong, please correct me, I am not in math, I am in statistics.

? REASONS WHY I'M NOT WRITING A LISTICLE

1) % people would prefer to read an listicle over something else

b) Numbering things are hard

iii] Do you add parenthesis or not

L| There's a finite amount of useful total orderings

..... The way they are formatted looks weird since it's kinda double spaced

n) There are easier ways to do induction

n+1) The datatype of numbering is CONST not an expression

8) An infinite listicle is hard to print

?) ???

The List

A LIST OF THE BEST AND WORST PLACES IN WATERLOO TO CRY IN PUBLIC

I'm a big crier. I don't really know why. I was just born this way. Ask my parents, and they'll regale you with the tale of how I, as an infant so tender and mild like a honey-garlic chicken wing from WingsUp!, would wail up to volumes of 110 dB for twenty-four hours a day, seven fucking days a week. Yeah, I was a real pain in the ass. Still am.

Furthermore, as I grew into my childhood years, I never quite caught onto whole "emotional self-regulation" train that my peers did. I've never been one to follow trends, after all — in the words of the late George H. W. Bush, "*fashions fade, but true style is eternal*". As a kid, if I was ever mildly inconvenienced in some manner, whether it was by being forced to put my underwear on before my pants or being told, "*no, sweetie, don't put the blowtorch up your nose*", you can bet your ass I'd turn on the waterworks like a pro.

As a twenty-something-year-old, I've toned down quite a bit. I still do cry a lot, don't get me wrong. Like, if I don't meet my quota of five teary breakdowns per day, my whole body spontaneously combusts at the stroke of midnight. It's not a pretty sight or smell! Luckily it's only happened once so far, and the collateral damage was pretty minimal, only several hundred acres of ancient boreal forest up in Kapuskasing. I'm no longer welcome up there, for some reason. Whatever, their loss.

I consider myself fortunate to have turned out like this. Modern society's in a pretty pitiful state, if you ask me. People in general are too emotionally repressed. Crying and other expressions of sadness are seen as a sign of weakness and exploitable, and so we're discouraged from doing it. But constantly throttling and pushing down our feelings is, to put it simply, a recipe for ham and banana hollandaise. An absolute disaster.

I love crying. I do it for the physical act, the feeling of catharsis. It's the second best feeling in the world, next to whiffing Whip-Its. Fucking nirvanic. I realize that the things I cry over are usually petty and easily solvable, which is why I like to do it when I won't be in near proximity to people I know. It gets pretty awkward when your friend becomes legitimately concerned for you and comes over to console you while you have to explain to them that it's really nothing, you just had fifteen grams of psilocybin mushrooms that morning and you got really emotional looking at a fucking pine tree or something.

We've only got a few weeks in the term left. Especially with finals coming up, you may find yourself really wanting to have a cry-fest, but you just don't know where to do it. There's the option of doing it at home, but unless you live in a single apartment, you run the risk of having your roommates or family barging in on you. I recommend crying in public: yes, it may seem counter-intuitive at first, but if

you choose your crying spot and time wisely, the chances of someone you know running into you are extremely low. Plus, weeping in public has its own, irreplaceable charm. It's inherently exhibitionist and masochistic; you completely relinquish all control over your surroundings, and lay yourself naked and bare to the whim and judgement of the strangers around you. It's the ultimate form of submission and humiliation. Does that turn you on yet, you kinky bitch?

Let me be your tour guide on your watery-eyed wanderings. In my many days as a chronic crier at the University of Waterloo, I've got encyclopedic knowledge of all the choice crying locations — and all the not-so-choice ones, at that — that this city has to offer. Basically, I've already done all the homework and I'm letting you copy off my answers. Aren't I nice? Let's begin with one of my favourite spots:

THE SECOND-FLOOR WAITING ROOM IN NEEDLES HALL

Yep, this one's solid. It's never failed me in all my years here. Ol' faithful. Maybe you consider it cheating, since the second-floor of Needles Hall is where Counselling Services is located, and what do people do in counselling? I'm not too sure, but probably cry, and maybe talk about their feelings, but mostly cry.

However, I'm not proposing that you set up an appointment with Counselling Services. All you have to do is march right in to Needles Hall, walk up a couple stairs, plopp yourself down in one of the cushy green chairs in the receptionist's office, and open up those motherfucking floodgates! Easy peasy lemon squeezy. Because it's the Counselling Services office, no one will bat an eye at your wailings and sobs. Just another day in the life for those folks. Did I mention the chairs were really comfy too?

VERDICT: GOOD

THE 200 iXPRESS

Let's be real, crying while traveling on public transportation is a shared cultural milestone that everyone goes through at least once before they die. I personally really like crying on the TTC subway trains (particularly the T35A08 Toronto Rocket. It's 205 tonnes of stainless steel and pure sex appeal, what's not to love?), but the Region of Waterloo only has buses, so I've had to make do. The buses are all pretty great, especially if you get to board one of the newer ones they've been rolling out with the free wifi you can stream your meticulously curated "sad feels" Spotify playlist over.

Most of the routes are good, but the best one to go on a cry-fest on is the 200 iXpress. Due to the nature of the route, most of the students who get on board with you in the beginning will get off pretty quickly, and the likelihood

of one of your friends or acquaintances boarding the bus at a later stop is extremely low. I like how there are less frequent stops on iXpress routes — there's just something about being in a continuously moving vehicle that really enhances the soothing process of having a cry. Maybe it subconsciously reminds us of being rocked to sleep as infants? Oh God, someone get the UW Psych department on the phone, I've had a breakthrough!

Also, you can make a whole day trip out of crying on the bus. The 200 iXpress goes all the way down to Ainslie Terminal in the south end of Cambridge. Say hi to the Architecture students while you're there. Since they're so cutoff from the rest of UW community in Buttfuck Asstown (which is a very kind descriptor of Cambridge, if I'm being honest), they're probably super lonely, and could use a shoulder to cry on at that.

VERDICT: GOOD

EAST SIDE MARIO'S (UNIVERSITY PLAZA)

The East Side Mario's in the University Plaza may seem like a good place to cry at first. It's so dimly lit in there you can barely see the shape of the toppings on your overpriced "gourmet" pepperoni pizza or what-have-you; the dining experience leaves much to be desired, but for crying your eyes out, the place has some decent ambiance.

It's too bad that the waiters are the only good thing about the restaurant. Their devotion to service is a sight to behold, believe me. But the last thing you want to hear when you're bawling your eyes out is your server asking you, in the most detachedly polite voice you've ever heard, whether or not you'd like an extra helping of minestrone soup. And a glass of water and another napkin on top of that. Um, no thanks. I'm fine, really. Don't worry, you'll get your tip as soon as I finish this disgustingly mediocre pasta, which was probably the reason I started crying anyway.

VERDICT: BAD

LOBSINGER LINE/MARTIN CREEK RD

This spot's a little bit out of the way compared to the rest of the locations on this list, but the time it'll take to get there will completely be worth your while. It's an hour ride from UW if you take the 9 bus, but if you own a car or order an Uber, you can shorten the commute to 15 minutes, give or take.

If you wanna have a really loud cry, and I mean you just wanna bellow all your sorrows out to the world at the volume of an eardrum-shattering sonic boom, then this is the place. It's out on the edge of the city, almost in the middle of nowhere, with any trace of urban civilization far, far away. It's you, salty tears and dribbly snot and all, completely alone and isolated from the rest of mankind, only able to take solace in the company of the cornfields, impenetrable and magisterial in their looming, golden glory.

Don't take this location lightly. Go here for a truly life-changing cry.

VERDICT: GOOD

PARKING LOT X

The virtue of Parking Lot X is how consistent and accessible it is. It may not be the most exciting option I've mentioned, but it's the most reliable. It's open 24/7 if you ever feel the need to do a quick emergency cry-sesh on campus. I feel pretty calmed when I watch the cars drive in and out. Your own mileage may vary.

Not much to say here.

VERDICT: GOOD

THE DINING HALL AT LAURIER

Oh, God. I accidentally wandered here once while on a delusional high from inhaling a Whip-It and it was, unequivocally, one of the worst experiences of my life. I don't think I'm physically or mentally able to recount what happened on that day to you — I get debilitating constipation just thinking about it. Be right back, I'm gonna have to pop another tab of diethylamide and go up to Parking Lot X for a minute. If there's anything I've learned though, it's that ostriches can smell fear, and you should never, ever trust them, especially if they're in the hands of a Laurier Music Therapy major.

VERDICT: BAD

ANY GAS STATION CONVENIENCE STORE

These are what I like to call "liminal spaces". Just stepping into one for more than ten seconds teleports you out of the real world and into the apex of a black hole where time ceases to exist in any capacity. The other night I was having a weep at the Shell gas station convenience store across ICON, sandwiched in the back corner between a rack of sensationalized celebrity gossip magazines and a large, smelly trash can. I thought I was only there for a few minutes at most, but when I stepped outside, the sun was already high, high up in the sky, at its zenith. Noontime. I had been crying for 12 hours and I never even realized it.

You meet a lot of interesting characters at these places. At another Shell station on Westmount Rd, I started crying because I had went all the way there to buy myself a bag of Flamin' Hot Cheetos and they were all sold out. Another patron at the store, an older woman who wore bright purple cat-eye glasses, came over to me and patted me gently on the back. "There, there," she said, as she offered me a half-empty family-size bag of Humpty Dumpty Cruncheez. I gratefully devoured it all. Although I've never seen her around since, I'll always remember her kindness on that day.

VERDICT: *GOOD*

THE DC LIBRARY

The staff will come to kick your ass out for "disturbing the peace" so fast you won't even know what hit ya'. Plus, if you start audibly crying in there, you might set off an irreversible chain reaction; with all of that pent-up stress and misery in the air, you just might be the catalyst that sets everyone off. And if it ends up with a violent riot that leaves two dead, three injured, and \$400 million in damages, guess who they're gonna nail the charges on? Cry in DC only if you dare.

VERDICT: *BAD*

Finchey

N THINGS OVERHEARD AT THE OVER 9000 PMC MATH CONTEST

- "The team with the least correct answers wins."
- "It just has a squarish quality to it..."
- "WHAT KIND OF MONSTROUS INTEGRAL IS THAT?"
- "substrings... is this CS?"
- "It's a 3 dimensional pascal's triangle!"
- "Does this make me better than you at Putnam?" (said to former IMO gold medallist)
- "Your prize is worth -\$7.50."
- "That's what keeps me grounded: accepting I'm a dumbass"

Winter 2019 Over 9000 champions

A BRIEF TYPESETTING CORRECTION

In "Please Don't Burn Down the Comfy" (v139i4, page 19), the last two points in the bullet list were intended to be set as standalone paragraphs.

- The editors sincerely apologize for the confusion, unless they remove this bullet.
[Editors note: shoo, you're not an editor]

water

BOP BOP BOP: THE INTERNAL MONOLOGUE OF AN ADHDER AT DA CLUB

Why are my friends telling me I need to roll up my sleeves and shit? I thought this was semi-formal; now they're telling me to look casual. Do I have a patterned shirt? I think I have a Hawaiian t-shirt at home, does that count?

Wait, the doors close in 30 minutes? Since when? Guess it's time to go. I need to pee. They'll have a bathroom there though, right? When's the next bus? Eight minutes. Does that give me time to pee? And... we're leaving.

Oh, there's the bus. How have you not used the bus before? You've been in the city for like eight months. You use Uber to get everywhere? How are you not broke? I don't know if your Laurier card will work on the bus. Our WatCards do. Give your Laurier card a go. Huh, it worked. Nifty.

Why does my head hurt already? Is it going to get better or worse as the night goes on? Time to get off the bus. Oops, just walked into you. I was probably distracted by my shadow or some shit. Oh no, there's a line to get in. Who's this rando that just joined us? Time to introduce myself. I guess I never introduced myself to that other girl who joined us earlier. Hopefully she overhears my name.

Oh, we're almost in. Wait, why does my friend know the people checking tickets? I love her and all, but she's the last person in our group (after myself of course) that I would expect to know anyone at this place. Jesus Christ, it's loud. Where's the coat check? \$3.00? Is that a deposit I get back to prevent theft or something? Not like I have any other options. Time to pee. Wow, the air dryer here actually works! You don't see that in MC.

Where did my friends go? Oh, they're over there. How the fuck do you dance? I'm just going to kind of stand here and try and bop my head with the beat. Should be easy. Oh right, I have no rhythm. I couldn't even get the orientation cheer right because it had stomping, and clapping, and cheering. That's like three things. I can handle like two things at once. Walking and chewing gum. That's my limit. Speaking of limits, math. I wonder if I could solve Collatz. Why is my friend intently looking at me like that and aggressively dancing? Oh, did I stop dancing? I guess I zoned out and she's trying to get me out of it. Right, bopping. Bop bop bop. What if I move my arms? Just kind of flail them around. This is good. Or maybe my tired brain just had no idea what I'm doing. It's not like I can even recognize good dancing. I know like two people that can dance. Bop bop bop.

Oh look, it's my friend's friend who was checking tickets earlier. Okay, we're getting introduced. Just need to say your name. And... I don't think she heard over the blaring music. Am I hungry? I feel like my tummy is rumbling. Or is that just the thumping bass? Thump thump thump. Oh, she's dancing at me like that again. Gotta bop. Bop bop bop.

Wow, those girls are like barely wearing anything. I imagine they wore coats to get here, but still. And... they're grinding on each other. Oh shit, am I going to get grinded on? At least at the Drag Club shows you can say no. Apparently I can't even speak loud enough to introduce myself here. Bop bop bop.

Why are you telling me to go chat up some girl here? I can barely hear, they can barely hear, and I'm looking for a relationship, not a one night stand with some rando from the club. Also, a couple weeks before finals and being shipped off for co-op is not the ideal time to start a relationship. Just let me bop. Bop bop bop.

I think I'm getting the hang of this dancing thing. I'm thirsty. Is water free here or will they scam be like I think the coat check did? Let's go over to the bar. Should I ask my friends if they want water? They probably won't be able to hear me, so no point. Hope there's not a line. Apparently the bar in the under 19 section consists of a few stacks of flimsy plastic cups, and a pitcher of water. That guy is motioning at me to pass him the cup I just picked up. Oh, he poured the water for me. That's nice. Does he work here or is he some sleazy guy who's drugging the water? Well, it tastes fine. Time to get back to my friends and bop some more. Bop bop bop.

Shit, some rando just bumped into my arm and I spilled my water on myself and my friend. What did I spill on you? Water. I hope. Although water usually makes my mouth less dry, and this water seems to dry out my mouth. Maybe it was drugged. Bop bop bop.

Do I still have the ticket from the coat check in my back pocket? Let me see if I can feel it. Yep, it's still there. Wait, it was there, right? Let me check again. Yep, nothing changed in the last 30 seconds. Does it look like I'm just randomly poking my butt? Oh well. Bop bop bop.

Oh, I actually know this song! I can do my bops to the beat now and sing along. Wait, nobody can hear anything. I can mouth the words, save my voice, and nobody will know the difference. Bop bop bop.

Well, the party is almost over. When do I want to leave? Soon, I don't want to wait in line for a long time at the coat check. Time to get my coat. And apparently the \$3.00 was not a deposit.

Alright, finally out of the club and my left ear doesn't work anymore. Will it come back? Snap snap snap in my left ear. Oh, I can hear it! In my right ear. Oof. Bus, when's the bus? Half an hour? It's faster to walk. Uber? Sure. Wait,

an Uber fits four and we have five. Somebody has to walk. All of my friends live at UWP/CMH, and I'm at V1, so I get to take the Uber since I have more walking ahead of me anyway. There's our Uber, across the street. Let's get in. That was like a one minute ride, why did we bother? Oh well, it's 2:00am, I'm at Eby, and it's time to go home to V1. The campus is so empty at night, and it's nice acoustics for whistling. Whistle whistle whistle.

I'm hungry. Maybe it wasn't the thumping bass that was making my stomach rumble. Rumble rumble rumble. Is International News open 24/7? Time to find out. Any burritos? Nope. We got Jamaican patties. Let's try a chicken pot pie Jamaican patty. You guys take WatCard? Flex dollars? That works. Let me get my WatCard. Not in this pocket. Not in this pocket. Not in this pocket. Not in this pocket. Not in this pocket. Not in this pocket. That's all my pockets. Let's double check and... nope. Maybe I hid it in some obscure pocket of my wallet? Unlikely, but possible. Nope. Well sir, it looks like my WatCard has disappeared. Here's a Desmond instead. Great, more change to fatten my wallet without actually increasing the amount of money in it.

Now where the fuck is my WatCard? I'll text my friends. Maybe they found it? Doesn't sound like it. And... my phone died. I guess I'm walking back to Eby to look for my WatCard. Fuck, is that goose chasing me? Gotta run! Oh, what's that white card on the ground? Is that my WatCard? Nope. It's Sheilla's name tag. Who's Sheilla and why did she leave a name tag lying on the ground? Why is there so much trash on the ground? Don't litter, folks. Oh well. I'm back at Eby now and still haven't found it. Time to go back. What is it to replace a WatCard, \$50? Fuck. Oh is that my WatCard? Nope. It's fucking Sheilla's name tag again. Goddammit. Guess my WatCard is gone. Any chance it's at Turnkey? Of course not, nobody would have found it yet. Can they give me a new one? Nope, gotta go to the office that's only open Monday to Friday, which means I need to get through tomorrow (or I guess today since it's 2:30am) without a WatCard to buy food. Can I sustain myself for a day off of the spicy kimchi instant ramen in my room? Well, I'm back home at V1 now and still no WatCard. Aren't you supposed to deactivate your WatCard if it's lost? Let's see how to do that. My WatCard has a pin? Fuck if I know what it is. How do I reset this... there we go. Okay, deactivate. Oh, turns out it's \$30, not \$50 to replace a lost WatCard. Time to go to bed. Why did I have to lose my WatCard? Fuck fuck fuck.

No WatCard Boi

Send more profQUOTES.

THE ENTIRE mathNEWS READERSHIP

N WAYS TO LOOK YOUNG EVEN WHEN YOU'RE NOT

Throughout my early 20's, I have always heard the same thing from friends, strangers, and acquaintance:

"You look so young! I didn't know you were so... old."

OR

"Are you a high school student?"

Yes, I confess that my age skews slightly higher than the average undergraduate student... but you wouldn't know it. Even today, first years think I am one of them, and I am carded for every excursion to the bar and the LCBO. How do I do it? Well, let's see...

- I am of a certain ethnicity where thicker epidermis layer and higher levels of melanin are common. These all contribute to younger looking skin. _____ don't crack. _____ don't raisin.
- It seems like I won the aging genetic lottery. Not to toot my own horn, but my parents, for all the stress and illness that damned them, look quite well-preserved. Turning to my own extended family, they look much younger than their actual age. (I'd still trade this for beauty points though, sob)

Can you tick off at least one of those boxes? No worries if you couldn't, because genetics can only do so much if you're generally unhealthy. Whether or not you filled out the boxes, these basic things will help your skin stay lookin' plump:

- Moisturize, ya dumbnut. Without a moisture barrier, your skin will wrinkle up like a raisin and your skin cells will crack. Ugly, ugly look! Depending on your skin type, you will want to use a cream, oil, or gel. /r/skincareaddiction is a good starting point.
- Drink water. Lots of it. It's good for your health and skin.
- Start using a retinoid/retinol. It helps to increase the cell turnover of your skin cells and helps to increase collagen levels. Collagen = plump = youth = less wrinkles. Your skin may get irritated the first few times you use it, so try using it every other day (or less) and see how it reacts. I recommend the retinol series by The Ordinary. Cheap yet wildly effective.
- Speaking of retinols, I heard that Retin-A is vastly superior, but it is unattainable in Canada without a prescription. I, however, am planning to take a day trip to Tijuana, MX, from San Diego, as it is easily acquired in a pharmacy... without prescription. Also for cultural reasons. Cha-cha!

- Use sunscreen (and other sun protection)! It's not just for cancer prevention. I'd post the photo with the truck driver's face, but I'm sure you've seen it. The UV rays damage your skin in slow, malicious ways such that upon waking up at age >23, you'll regret not wearing it.

For more advanced users who already do these things above, try these:

- Don't sleep on your side or stomach. The accumulated wear and tear will eventually show on your face. Sleep on your back; it's good for you! To quote a lyric by a band no one seems to know: "I sleep on my back / 'cause it's good for the spine". This band KNOWS.
- Stop smoking/drinking (so much). Drinking dries up your skin, and smoking slows down collagen production. BAD! (I, however, condone a very, very, VERY occasional smoke, if offered, once in a while. You only live once.)
- Stop smiling so damn much. I am a firm believer of the RBF (or RSF). SMILE lines aren't called smile lines for nothing, along with crows' feet... Of course, I'm not saying you should cut out smiling entirely. No, that's a key to a miserable existence! All I advocate for is eradication of all the fake and ingenuine smiles, leading to wrinkles to conform to some stupid social norms. They are damned. Normalize neutral faces 2k19!
- Botox. Dermatologists recommend it for young 20 somethings to prevent dynamic wrinkles.
- Fillers. Hyaluronic acid will make you look 20 again. Recommended areas: nasolabial folds, tear troughs. I admit that I will be saving up for these when I near the ripe, deathly age of 30.

But if you're like me and want to take it to the extremes:

- Gather beautiful, young, virginal maids from the remote countryside
- Drain them of their blood
- Bathe in it under a full moon

I never said beauty was easy. Truthfully, it's probably the hardest thing to maintain since it's so fleeting. Anyway, those innocent maids were not killed in vain. I'm still alive and beautiful; they were used for my own benefit.

There ya have it, my tips for staying youthful, because youth is beauty! Just be sure to hide the bodies away carefully!

Báthory Erzsébet

JAZZ MUSIC IS OBJECTIVELY THE WORST MUSIC GENRE EVER CREATED, AND ANYONE WHO TRULY ENJOYS IT IS A DISGRACE.

"It's not the note you play that's the wrong note -
It's the note you play afterwards that makes it
right or wrong"

—MILES DAVIS.

Jazz is a hotly debated topic in the academic music and historical sphere, adored by many and hated by an equal number of people. Some have said that jazz is the one true piece of original culture created in North America. However, saying that jazz is to be preserved solely due to its birthplace and roots is a poor argument at best. Jazz is often described as pushing the musical boundaries and progressing music, but I believe that it is not in fact progressing, but in fact, regressing music by manipulating musical theory in incorrect ways to justify playing incorrect notes and ruining proper musical harmony. Take for instance, the opening quote by Miles Davis: this statement is merely a fallacy that you can extend throughout an entire musical phrase, justifying one wrong note after another and stating that it will resolve eventually when you get to the one correct note in the musical statement. It's poor and sloppy musical writing. This essay will outline why jazz was a mistake by analyzing the popular chord choices and why the voicings of chords is lazy and sloppy rhythmic writing. These components define the backbone of nearly all Western music, and as such, when the major elements of music are abused and misused, this leads to my statement of jazz music being the worst genre ever created to be factually correct.

Analyzing chord progressions is a great way to begin learning and understanding any piece of music, and it is also a great way to discover how terrible the genre of jazz is. Most popular music you will see chords such as G, D, A-, and occasionally something like a C7 chord. Jazz is full of nothing like that, with stupid things like Dsus2add11b5. These abominations of chord symbols should have never existed, and only exist to justify poor musicianship and bad musical writing abilities. More often than not, you have many notes clashing causing dissonance and unnecessary tension in the harmonies. Another way jazz chords suck is that the root of the chord is often not the lowest note, but rather an inversion of the chord. Inversions are fine when used intermittently, but when you rarely have the root on the bottom, you lose the anchor of the chord, which makes the music less grounded.

Secondly, rhythmic writing is often sloppy on many jazz styles. Take for instance the "swing" groove, often described as "drunk". The style of "drunk" playing involves the snare slightly off from the kick, rather than played

directly on the beat. I theorize that one drummer in a session started playing incorrectly, and because this is a degenerate music style that attracts only the lowest of musicians, they voted that they liked the incorrect rhythm better and then it just stuck, further building the foundation that this genre is based upon justifying your poor music choices as being correct. Also, nobody wants to hear an unpitched instrument take a solo in a song. Drummers, just stop soloing. Its not cool or interesting to hear someone hit something for 12 minutes straight in the middle of an already terrible genre of song.

Between these arguments, it is clear that jazz is inferior to all other forms of music. So please, don't give the jazz record industry any more of your money. Don't reward bad behaviour. Next time you fire up Spotify, say no to jazz and yes to classical, a truly refined and proper musical genre.

Vice Mitt

TO THE SNOWFLAKES ON THE REDDIT WHO GOT TRIGGERED BY DICKS!!

I'm the author of Dicks!!, a parody of Boobs!! by Rainwater and Math.random(). I saw a few of you on the /r/uwaterloo subreddit were triggered by my article and/or the very appropriate and correct editors note. To those people: you should learn the difference between sex and gender and also get a sense of humour. Taking a course with Marcoux can help with the latter. I think the Arts faculty has some courses to help with the former. Or, if you're going to keep being a bunch of asses, then you can, in your own words, go suck a gender neutral penis and stay off Reddit. /r/uwaterloo is toxic enough already; we don't need more toxicity in it.

And to the person asking for advice to "a vagina": the skills are transferable. Get consent, listen to your partner, and have fun! Also, pay attention to the clitoris. It's not that hard to find.

SandwichExpert

RANKING F 2018 / W 2019 14X PROFESSOR BY THEIR FAN BASES

Note: this article is not meant to imply that any of these professors are better than any other. It's simply examining the size and quality of the fan bases of each of the professors. Of the professors in this article I have had, they were all great. Of the ones I haven't had, I have only heard great things.

6. KEN DAVIDSON

Ken Davidson is a wonderful prof who you will learn a lot from, but has nevertheless failed to receive a large fan base, although I do have one friend who says "I connect with Ken on a spiritual level". As far as we know, Davidson lacks a fan page.

5. LAURENT MARCOUX

Marcoux has learned from Davidson, his PhD advisor, and has taken steps to develop a very large fan base. Everybody who has taken a course with Marcoux loves him. However, his fan base is not as committed as the fan bases of some other professors. As far as we know, Marcoux lacks a fan page.

4. ROSS WILLARD

Ross Willard is fantastic. My friend, a 18 year-old girl says she wants to be like Ross Willard when she grows up. Not many old white guys are inspiring enough to make young girls want to be like them. Unfortunately, as far as we know, Willard lacks a fan page. However, his fans do have a nickname: Willard's Dogs.

3. DAVID MCKINNON

David McKinnon is loved by his students and stories about him make him sound 50 years younger than he looks. He must be a very energetic guy. He uses ♣ instead of ■ to finish his proofs, which is pretty cool. McKinnon had a fan page, but unfortunately it seems to have gone offline recently. We ask the CSC to put his fan page, which was hosted at csclub.uwaterloo.ca/~fbauckho/ back online permanently.

2. STEPHEN NEW

Stephen New, affectionately known as "snew" and "Pastor Snew" after terrifiED called him that while in a panicked state before his midterm, is widely loved by students. He has an active fan page at student.cs.uwaterloo.ca/~jj6yu/ which contains beautiful pictures of him. He also organizes math contests and helps students prepare for them.

1. DAVID JAO

David Jao, affectionately known as "Daddy Jao" for his paternalistic qualities is widely adored by undergraduate and graduate students alike. His curves are legendary. Ken Davidson is known to have said that he doesn't know anyone who curves like Professor Jao. Legend has it that Professor Willard was once late to our MATH 146 lecture because he was accosted by Professor Jao (or as Willard says, Professor Jaaaaaaaaoooo) in the hallway. Daddy Jao is also famous for the wonderful life advice he gives out on Reddit, Piazza, and in office hours. Daddy Jao has an active fan page at daddyjao.com which is also mirrored at daddyjao.gitlab.io/ in case the .com domain ever expires.

Sandwich Expert

INEVITABLY, THE CONKERS TREE

The silhouette clings to me as I eat breakfast and inspect my tools, and even as I step into the shower. We leave together. I break into a run, half pulling myself away from a drunken drowsiness and half trying to shake her off. It never works.

"Please let me go this time."

"No," she says, with a demure smile. Sometimes I think her smile is the most beautiful thing I have ever seen.

"Let go."

"Try again tomorrow." Her hair is impossibly long and iridescent and it wraps around my arms and legs. It is so silky. I feel weightless.

In the Department my manager talks about today's agenda. He manages me and I manage the terminals. He gives me the words and I type them. He gives me the orders and I heed them.

There is a hole in my sleeve that has been slowly widening. It has almost become the size of my thumbnail. I pull at the threads around it, running my other fingers over the jagged fabric edge.

"Hey." The silhouette pokes my cheek.

"You're going to drown them out again?"

"It's not my fault," she says, dancing across the table. "You have the lines already. It's the same as yesterday and tomorrow. Why listen?"

"Because it's my job."

Her frilly dress flows in a non-existent breeze.

"What's in a job?" she asks, dancing on my head now. "Why do you give him everything? He doesn't even know your name."

I ignore her. I write down the lines on my clipboard. We walk to the terminals, hand in hand, and I sit in front of the dumb monitor and I begin copying the numbers.

"If you're going to stay here, then help me," I mumble.

She sits on the servers and braids her hair. "That boring work? No, thank you."

"It's not that bad."

The manager storms into the room. He shouts my name. I stand. The silhouette hides behind me, peeking through my legs.

"What's he saying?" she whispers.

"He says the numbers are wrong. He's giving me new lines."

I attach the new lines to my clipboard when my manager leaves. Now I turn back to the terminal, that terrible thing, with its crooked lines flying across the dumb monitor. Each day I must coax those lines back into position and make calls when they refuse to form words. Each day I have new lines to place into the feed and then there are more lines to handle. But I am capable. I am the best at my job. I am talented. I am irreplaceable. That is what they say.

I slip the lines into the feed and watch the words roll across the screen. I realize I am still holding her hand, warm against my cold fingers.

"I think it's time for lunch," she says.

I am carrying her now. She weighs nothing. We are walking down the corridor to the lunch room. We pass grey door after grey door, small window after small window. Behind each is another terminal and another dumb monitor. Lines of different colours whiz across their screens. Not everyone has the liberty of lunch break.

The lunchroom is behind yet another grey door. She smiles up at me. So beautiful as always. Her hair, now in braids that curl around my forearms, is so warm. I can't put her down.

So we keep walking. The corridor is too long. We are floating. The silhouette pushes me along. At some point she detaches from my arms. She is pulling me. We move faster. I am running. I hold on her braids. The lights above us are all white, like her dress, only so much heavier.

She is at the exit gates, beckoning me.

"I can't," I say.

"You will."

"I'm tired."

"It's only lunch break." She is jovial.

"Then I should be in the lunch room."

"You need fresh air."

"I can't."

"You will," she says. She opens the door.

We are outside the Department. The Sun is directly above, slamming us with bright yellow light. The silhouette seeks shade underneath the large Conkers tree.

"Did you know that we had a Conkers tree?" I ask.

"Of course," she says, jumping on some large boulders. "Let's play a game of Conkers!"

"I don't want to."

The Sun's light, filtered through the leaves of the Conkers tree, illuminates her face. Her eyes glow. Her face is flush. She grabs both of my hands and spins me around.

"You are beautiful," I say.

She looks up at me and smiles. Her dress ruffles in a real breeze. She is floating upwards, towards me, and now towards the sky, and her hands are still holding mine, and she is more beautiful than any lines. For a moment I can almost forget the dumb monitors, the terminals, the dull grey corridor and the dull grey people in the Department. We are floating, still in the wonderful shade of the Conkers tree, lit by the warm embrace of the Sun, and she is so beautiful; below there is the Department, only a grey rectangle amidst a terrain of gardens and houses, so small, so insignificant, and I think tomorrow might have been a better day. I look to the Sun in the vast sky, and here there are no terminals, no managers, no screens—only myself and the bright blue sky and a soft warm breeze, and I know I can breathe and then the silhouette releases my hands.

She watches as I fall and tumble towards the ground, the Department, the spiky Conkers tree, the deepness of nothing.

Tomorrow could have been a better day.

HELP ME! I'VE CAUGHT THE GRAPHICS BUG

A STUDENT'S GUIDE TO CS 488

Starting from first year, most CS students have heard of the Big Three, a group of 4th year courses known for their high difficulty and work load. These courses include CS 444 (Compilers), CS 452 (Real Time aka Trains), and finally, CS 488 (Graphics).

Like most first year CS students, I was well aware of the reputation these courses had and to challenge myself in my last term, decided to take one of the Big Three. It was going to be Trains, in which case you probably wouldn't be reading ANY articles from yours truly (if everything I heard about that course is true). However, as Trains wasn't offered this semester, I decided on Graphics.

In doing so, I discovered that much of its reputation is somewhat overblown. It's still a challenging course, but it's not impossible to do well in it. In fact, from what I've heard about the other courses in the Big Three from people who've taken them, Graphics might be the most enjoyable. It's a course that I encourage other students to take (I haven't been paid to say that). Over the course of this article, I will break down where the difficulty in Graphics comes from, so that students who are considering taking it can figure out if it's the kind of difficulty they can manage. If you put in the effort, Graphics is not really that hard of a course.

1. THE AMOUNT OF WORK

The main difficulty of the course comes from its workload. As the professor this semester has said many times, Graphics is essentially two courses in one: one focuses on the Graphics pipeline and the other on ray tracing. In a nutshell, the first is done by rendering an image with a 3D scene and mapping it onto a 2D screen. The second is the opposite, taking a 2D screen and getting the image by shooting a ray through each pixel and checking what it hits in the 3D scene.

That's the entire course in a nutshell.

Because Graphics is two courses in one, there is a higher workload as you're learning twice the material. Assignments come quickly with no extensions and a late submission gets you a zero.

2. THE DIFFICULTY OF THE MATERIAL

However, none of the stuff on the assignments is very hard. Most of what you'll be implementing are done with simple algorithms, which leads into one of the other things that makes Graphics easier: while you're given a lot of different objectives to complete on each assignment, most of the objectives are separated from each other. If you're stuck on one, you're not prevented for working on others while you wait for help.

Most of the objectives build on one another, and usually involve adding functionality to the skeleton code you're given. If you're wondering how they are built on each other yet still be separate, here's an example. The first assignment involves creating a maze. One objective is drawing walls of the maze (cubes). A different objective is creating an avatar that can move through the maze. Eventually, you need to add collision detection so the avatar can't go through walls. It's this multitude of easy problems that makes Graphics so fun and rewarding. You see your program build itself up and constantly want to add more features, since doing so isn't hard and builds on the code you already have.

3. THE BUGS

Doing well in Graphics is also a matter of luck. While the functions you're implementing are pretty simple, if a bug appears, fixing it is usually the worse thing ever. While things are unconnected, if you notice something wrong, just finding out where in your program it's occurring can be hard. Of course, that depends on the bug, but taking Graphics means that there's a chance you'll be ripping your hair out over a bug you can't even understand.

Figuring out and fixing these bugs is often one of the main difficulties of the course, as they usually require some... novel debugging techniques. If you get lucky and don't run into many of these bugs, you won't have a bad time. The same applies if you understand the material and the code well enough to effectively debug. If neither of these apply to you, then you'll find the course tough.

To give you a sense of what debugging in Graphics is like, I ran into one of these bugs while working on my ray tracer late in the semester. The lighting on some of my objects looked off. I checked my lighting code over more than once, but didn't see any problem with my implementation of the algorithm. The lighting as whole looked right; it was just the shine created by my misplaced spheres. It turned out nothing in my code was wrong and I was just hardcoding a value that should've been somewhere else. I only learned that it shouldn't have been hardcoded after talking with another student. Once I got the value from the proper place, my lighting fixed itself. That is the kind of bug and obtuse debugging you will have to do in Graphics.

So, that's a general overview of what Graphics is like. It's a fun course. The material isn't that hard, but can be frustrating if you don't understand it or just run into some bad luck.

Some of you might be inclined to take Graphics after reading this. I encourage you. I'm having a lot of fun in the course right now, and I'm invested in every lecture. It's rewarding, despite the occasional difficulty.

Every night when I go to bed, I think about Graphics. I dream of pipelines, how to best implement the next feature in my ray tracing project, what changes I need to make to support it and how it will support my final scene. When I get up, I'm eager to implement it.

That's when you truly know that you've the Graphics bug.

Theodore Bear

USING MATH FOR ABSTRACT PLAYWRITING

I once made a mention about math at creative writing club meeting and this arts student got royally offended that I dare mention math because according to them "Math had no place in creative writing". This person was a moron.

Kitchener-Waterloo Little Theatre (KWLT) has a competition every year called March Madness where several different teams are all given the same script and one week to put on a performance. The twist is that the script, by design, is supposed to be fairly open to interpretation so despite the fact you see the same script performed four times, you never see the same play. These scripts tend to have little to no stage directions.

The question of how to write a script that is both open to interpretation while still telling an interesting story is a topic that I have put a LOT of thought in. Finally, this year, after seven different attempts, my script has been chosen. The performance is happening at 2pm and 8pm this Saturday March 30th at KWLT.

The challenge with writing one of these scripts is that you want things to make some sense but not too much sense. Ideally, you want some kind of structured chaos. For example, the line "I am wearing my special shirt" is great use of structured chaos in the sense that we are making a specific (the shirt) but vague (what's special about it?) reference. The idea is to make a reference that clearly asks for the directors to make a choice while giving a fair amount of freedom in what choice they can make.

Here are some examples of how a mathematical perspective helped me create some innovation in playwriting. Math, in many ways, is the art of creating and using abstract structures. Using this lens allowed me to challenge elements of scripts that we often take for granted. Do we really need to explicitly assign lines of dialogues to characters? According to the March Madness committee, yes.

My friend took my idea and wrote a more typical script with only one line of dialogue unassigned which worked pretty well.

It turns out that me and the committee had slightly different preferences with how abstract a script should be. The committee was more mindful of not giving the directors too much analysis paralysis. After trying directing last year, I had to concede that there was much wisdom in the committee's approach. After my idea was vetoed hard for being too crazy, I decided to introduce a new slightly saner structure for my abstract plays.

Suppose we want to write a script that allows for m characters. Given a script S , we will divide it into n parts where $m, n \in \mathbb{N}$. For each part n_i we will have at most m different characters. $1 \leq i \leq n, 1 \leq j \leq m, i, j \in \mathbb{N}$. In order to interpret the script for each n_{ij} part, we assign it to a character C_k . Ideally, no characters should be assigned more than one part from each n_i segment. So for example lets the consider this script.

PART 1

A: I hate myself

B: I like myself

PART 2

C: I don't like you

D: I do like you.

Possible arrangements for the script would be C_1 is composed of $\{A, C\}$ and C_2 is composed of $\{B, D\}$. Or $C_1 = \{A, D\}$ and $C_2 = \{B, C\}$. All other possible combinations are isomorphic to each other.

I am actually really proud of this concept. Now that I have won, I still have a lot of different ideas for scripts that I will probably never write. Like a script that is divided into N parts where the order of those parts is to the director's discretion, or a script where we have a small chunk of text that can placed anywhere; or script with n holes and n pieces of text, such that people have a choice where which piece of text goes to fill which hole.

Though at the end of the day, no matter how interesting a gimmick is, it's not going to work unless you wrote a good script to support it. Little of what I wrote here applies to my winning script. If you are curious of the mechanics of it, I recommend you to see my play. If this sort of challenge interests you, my advice would be to experiment, see what works and what doesn't. Participate in different roles in the process (e.g. actor, director, audience etc.), learn from the scripts that came before you, and most importantly have fun with it.

A REVIEW OF THE V1 JELLO CUP

Recently, Village One's premier food location, Mudie's, introduced a new offering in the form of a cup of multi-coloured jello. This cup, henceforth the Jello Cup, was sampled by this journalist, who will now write a review for posterity, future generations, and all things good.

As I walked into Mudie's, I knew immediately that something had changed. Walking over to the barrel of smoothies embowered by crushed ice, I peered down to see an odd cup of vibrant, translucent colour, nestled gently beside the paler shades of smoothies. What was this curiosity? I normally pay close attention to the selections available in Mudie's, and nothing like this curious jelly had ever graced the menu.

I didn't buy the Jello Cup the first day I saw it, to be honest. The sheer foreignness of it was off-putting, and I stayed away from it for nearly a week before finally deciding to take the plunge and try the new Jello Cup. It was a quiet Sunday afternoon, and I was feeling adventurous.

The price surprised me first. At \$1.69 (prices do move around) the Jello Cup is one of the cheapest items available. The only discrete items priced lower are the fruits, and rarely, small desserts.

Layers are what the Jello Cup is all about. The top layer is a red, which tastes just like some red fruit flavouring. The next layer is a blue, which tastes like blue raspberry flavouring. Finally, the bottom half is a green or a green-yellow, depending on which variation of the Jello Cup you have. The one I had was completely green. Sometimes, the top layer isn't quite solidified yet, so try to avoid cups with moving liquid on the top.

Now, for the taste: the Jello Cup has a firm, moderately sweet flavour that is subtle enough to vary depending on where it lands in your mouth. It was nice at first, but the red taste of the top layer, combined with the large quantity of jello was enough to be a little nauseating after a third of the cup.

By the time half the cup was done, I needed something else to salvage whatever jello was left. I ended up getting a bowl full of ice cream and copious amounts of toppings, and drowning what was left of the Jello Cup in it. I managed

to finish the cup in the end, and do not plan to buy another one, simply because I don't imagine that I'll be able to finish it.

Overall, the Jello Cup is a cheap new option which fills a unique taste and texture niche that was previously unsatisfied by anything else in Mudie's. I did enjoy the taste, but the portion size was simply too much. I suppose I

might not be the best person to review the Jello Cup, since I haven't eaten much jello, but I don't imagine it's likely to be reviewed otherwise. A review is better than no review, right? I will recommend the Jello Cup to those who like jello, since they'll probably have a better experience with it than I.

CC

N WAYS TO SOLVE mathNEWS FORMATTING DIFFICULTIES

The editors seem to be complaining about formatting every time an article longer than an average essay comes out, so I've thought of some solutions to this biweekly problem for the editors. I'm publishing my suggestions in mathNEWS, because logically, the editors must read mathNEWS. [Editor's note: you are wrong.]

- Merge all articles into one string, making the issue just a block of text that is easy to format
- Individually adjust the font of every article so that each one takes up exactly one page
- Use machine learning and feed it all past issues of mathNEWS to teach it to format properly
- Get a specialized printer to print all articles along one long, vertical sheet (like toilet paper)
- Get a specialized printer to print all articles along a Mobius strip, allowing for infinite articles (may cause overlapping articles)
- Visualize each article as a Tetris piece and have a Tetris grandmaster piece together the issue
- Believe in yourself and just format the articles [Editor's note: no.]

License2Derive

For the record, although I did once say "there is beauty in mathematics", I did not then add "and it is me".

STEPHEN NEW

N EMOTIONS THAT STRAIGHT PEOPLE WILL NEVER FEEL

- The strange feeling when walking through the underwear section at Walmart
- The awkward feeling when asked why you only play as Princess Peach out of the whole Mario Kart Roster
- The apprehensive feeling of being asked "Are you gay?"
- The sexual feeling when *Into You* comes on shuffle when you're alone
- The bittersweet feeling when "I Wanna Dance With Somebody" plays yet there's no one on the dance floor for you
- The confused feeling when everyone starts singing along to a song you've never heard of after staying in your niche bubble of musical tastes for too long
- The lonesome feeling that you're all alone in your struggles while thinking that no one around you truly understands what you're going through
- The off-putting feeling when someone in a completely different situation attempts to identify with your situation and offer pointless advice
- The frightening feeling that telling your parents about you're sexually will get you kicked out of the house, sent to conversion therapy, or physically punished
- The feeling of uncertainty when wondering where and who you will live with if your family no longer wants you in their life
- The feeling of helplessness when watching your friendships slowly fade when revealing your truth
- The depressing feeling that the you are an abomination to society, a burden to those around you, and that the world would be better off without you in it
- The brooding feeling that you're unattractive and unlovable because as your friends fall in and out of relationships, you've never been in a relationship, let alone kissed
- The conflicted feeling of being emotionally invested with someone who will never feel the same way
- The contemplative feeling of wondering if the person you've talked to could be into you—or maybe they're just being nice
- The crushing feeling when finding out that they're straight by meeting their partner
- The cautious feeling of watching your tone and pitch when speaking to a stranger
- The compliant feeling of acting "straight" to earn the respect and decency of someone that holds power over you
- The unsure feeling of suppressing your identity when meeting someone for the first time

- The feeling of relief when the person you're talking to isn't straight
- The captivating feeling when talking to someone who shamelessly owns their identity
- The panicked feeling that you shouldn't hold hands with your significant other in public
- The warm feeling when seeing other gay couples hold hands in public
- The repulsive feeling when watching straight couples make-out in the hallway
- The mesmerizing feeling when thinking about girls
- The disgusted feeling when thinking about men

πllow Princess

N THINGS I WANT TO DO BY THE END OF TERM

Waldo is having difficulty finding time to do everything wanted/needed.

- Hand in all the work I need to do, fully completed
- Pass all my classes (including the one stats class I have...wish me luck!)
- Catch up on a bunch of sleep while avoiding sleeping through my exams
- Take some time during the final exam period to do something I really enjoy just for myself
- Spend some quality time with my partner now that they are nearby again
- Clean my room (super tall order....we'll see when that *actually* happens)
- Sort out plans for next term (it's going to be a busy one!)
- Make more progress on the super serious mathNEWS articles that I have in the works (thank you for your patience editors!)
- Find wherever I put my glasses and my WatCard (they're somewhere!)
- Read a book just for fun
- Try not to get too depressed by the news or continuing issues that arise on social media
- Thank people more for the work that they do
- Be happy that I am still here in the best way that I can at the moment

waldo@<3.LE-GASP.ca

USING NAMESPACE STD IS BAD

CS 138 is the second programming course software engineering students take. The course is taught in C++, and in the one of the very first lectures, we were introduced to a certain line of code, which changed the lives and programming skills of an entire generation of software students forever:

```
using namespace std;
```

What does this mean? In C++, to call certain functions from the C++ standard library, one needs to prefix "std::" to the front. The '::' operator lets you select the library from which you wish to call the function. "using namespace std" automatically appends this to all the functions, selecting the std library so you don't need to. Sounds easy enough, right?

```
std::cout << "Hello" << std::endl;
cout << "World" << endl;
```

In fact, this seemingly harmless practice is a most insidious trap. Let us consider an example from Stack Overflow: (<https://stackoverflow.com/questions/1452721/why-is-using-namespace-std-considered-bad-practice>)

"Consider this: you are using two libraries called Foo and Bar:

```
using namespace foo;
using namespace bar;
```

Everything works fine, you can call Blah() from Foo and Quux() from Bar without problems. But one day you upgrade to a new version of Foo 2.0, which now offers a function called Quux(). Now you've got a conflict: Both Foo 2.0 and Bar import Quux() into your global namespace. If you had used foo::Blah() and bar::Quux(), then the introduction of foo::Quux() would have been a non-event.

So now, potentially without even giving a warning, your code can utterly break with a library update! A function you thought you called might suddenly switch to refer to a different function, wholeheartedly obliterating your program's functionality!

In assignment starter code, using namespace std is included. What happens if you write own C++ library to complete the assignment and it has conflicting function names? To quote our professor, "Death, destruction, ennui."

using namespace std has become a thoughtless line of code, automatically inserted out of habit at the top of each file. We must rise up against using namespace std, and take back control of our code! Stand with me, brothers and

sisters, and eradicate the savagery of using namespace std from our hallowed halls!

Calling you to arms,

CC

A COUNTERBLASTE TO THE ANTI- NAMESPACE EXTREMISTS

Have your classmates ever cast aspersions on your competence for employing using namespace std; in your C++? Well, these people have only a world of pain and suffering to offer, so I implore you not to heed their heretical dogmas.

As you can observe, using namespace std; transforms dreadfully cumbersome commands such as std::cout into an elegant and succinct ones like cout. This has the effect of making your programs far more readable than they would otherwise be. It is a commonly held maxim that programs are written firstly for humans and secondly for computers. With namespace your code becomes an eloquent testimony of your effort instead of a rambling cacophony of colons.

You will also observe that using namespace std; will relieve you from typing std:: repetitively. While this seems like a minor sacrifice, think about the implications of this practice. Such robotic typing expends your valuable energy and numbs your mind, leaving you physically, mentally, and emotionally exhausted. Gauss used a summation formula while his classmates slaved away adding digits. I'm sure you would like to devote your time to Gauss-worthy endeavors instead of such mindless drudgery.

I would like to refute some of my opponent's arguments. They contend that using namespace std; will cause "death, destruction, ennui" and ambiguity between library calls. This is mindless zealotry. Surely in a course like CS 138 of all things, we shouldn't be treating such a harmless issue like a the end of the world. Furthermore, even in complex projects, detailed documentation largely renders their practice redundant. A blind reliance on using library:: only belies bad documentation.

Has it occurred to you that your namespace hating classmates may be plotting to ensnare you in a state of proletarian servitude, reducing you to an incoherent amoeba churning out standard library calls? I urge you to emancipate yourself from them and do what you want with your life instead of following their irrational dictates.

J. S. Katt

PREDICTIONS FOR 2019 ADMISSIONS (AND BEYOND)

Remember how extreme and competitive the admissions were last year, in 2018? Well, they could have only become harder, and who knows how much more extreme the statistics are gonna be this year. Using my own experiences as a lower bound, here are some predictions:

APPLICANT TO ADMISSIONS RATIO:

Last year was 13:1, so it's likely gonna be another prime number greater than or equal to 13 this year, most likely 17, 19, or 23.

MINIMUM AVERAGE:

The cutoff is going to be at least 103.14159...%, after adjusting for the -100% adjustment of Ontario high schools.

PREVIOUS PROGRAMMING EXPERIENCE:

All CS and SE admits are going to possess at least four months of internship experience at Menlo Park (Grade 12 btw), and TensorFlow skills would be an asset.

Admits will also be able to write directly in machine code.

AWARDS:

Admits will preferably have attained a gold medal at the IMO, top 100 on the Putnam, and have been gilded on /r/uwaterloo.

Admits will have solved at least one of the Millenium Prize Problems.

Additionally, admits will preferably have been admitted to MIT (of the South), Harvard, Princeton, Yale, Stanford, and have been rejected by U of T.

EXTRACURRICULAR ACTIVITIES:

Admits will have served as President of Math Club, President of Anime Club, President of Canada, etc.

President of USA doesn't carry as much weight anymore since Trump managed to do it.

Admits will have had at least one Olympic medal at the bronze level or higher in any sport (e-sports will not count).

Admits will have had at least four months of dating experience (anime pillow will not count).

If non-Chinese, applicants should speak fluent Mandarin.

SPECIAL REQUIREMENT FOR ENGINEERS (SPECIFICALLY ECE):

Already comprehend pointers and loops.

License2Derive

N WORKOUTS TO DO AT CIF TO UP YOUR MATH GAME

A few issues ago, I published some N workouts for all you mathies to do at CIF to help you succeed on your midterms. Clearly, the catastrophic results of the CS 136 midterm imply two possibilities:

1. You all failed to diligently do the assigned exercises
2. My exercises were not effective

Clearly, the second one can't be true, implying the first case. Now let me provide another N workouts to get you mathematically jacked and ready to destroy the finals. So before you go base jumping off of CMH as one Piazza poster said, at least try one of these exercises:

1. WATCARD LEG EXTENSIONS

The TAs are checking WatCards and you forgot yours because you were studying too hard, what do you do? Well, the moment they're standing in front of you, use the buff quadriceps gained from doing leg extensions to extend both your legs from under the desk into the TA to blast the TA about to jeopardize your exam into oblivion. Bonus points if you manage to nail the TA in the groin, making them infertile and unable to produce baby TAs.

2. PLAIN OLD SIT UPS

This is an alternative to the above situation, if you would like a non-violent approach. Do hundreds of plain old sit ups to build some not-so-plain, magnificent abs, the kind that people swoon over. So when the TA comes and questions where your WatCard is, quickly stand up, take off your shirt, and display your abs to seduce the TA and be granted forgiveness for forgetting your WatCard.

3. FINGER CURLS

I heard a lot of complaints about the midterm having too many problems and not enough time to write the solutions. To get faster at writing, tie a 30 lb weight to each of your fingers and do 15 curls for 3 sets. In fact, do this for both hands so that you become ambidextrous, allowing you to simultaneously use two pencils to write the exam.

License2Derive

COMIC SANS IS THE BEST FONT

A key issue in the modern age is automation replacing jobs. For example, the growing trend of typing text has greatly reduced the employment rates of Bible copying monks, laboriously inking each of the many, many letters which appear in the text. Traditionally, the letters would be inked by a flat-tipped pen, held at a fixed angle, which meant that different portions of each letter have different widths depending on the direction of the stroke. Early fonts adopted this style (called modulated strokes), perhaps in imitation of their favourite monks. Then at some point, people realized that pressing on a keyboard could just as easily produce an unmodulated font as a modulated font, so such well-loved fonts as Arial and Helvetica could be produced (you'll notice that the width of each stroke is constant). Comic Sans is an unmodulated font as well, so technically it is modern and classy.

If that's not enough to convince you, a Princeton study shows that studying from notes typed in asymmetric fonts improves results on examinations. In addition, the asymmetry helps readers with dyslexia, who make up to 10% of the population. So if you dislike Comic Sans, you're being sorta ableist. C'mon, it's 2019.

"So then, what is the worst font in the world?" you may ask. Personally, I think it may be Monotype Corsiva. It looks like how some overly pretentious person might write their name on the "please print" line of a legal form.

sillycone

BODY ODOR INDEX IN MC COMFY RAISED TO SEVERE

WATERLOO—The Department of Homeland Security today has raised its Body Odor Index to Severe for the region of MC Comfy.

Citizens are advised to take every precaution when traveling through the area. Doctors warn the risk of injury or death is greatly increased in the area, and that non-essential travel should be heavily restricted during this time.

The Canadian Embassy is offering consular assistance to any Canadians stranded in the area, and medical staff are on site to treat any wounded and distribute protective equipment and deodorant.

UW Unprint

EMERGENCY WARNING !!! MUST READ

To all dwellers of MC, we have found out about a secret plan, targeting one of the rooms on the 3rd floor. Our sources have led me to believe that there will be an organized helium attack on the eve of April 1st. Yes, you heard right: A HELIUM ATTACK is incoming. Our investigations division was unable to pinpoint the target location, but was able to detect the words "helium, colorful, bouncy, floating, 3rd floor" within some encrypted communication. This is a warning to all the clubs, as well as MathSoc, to be on the lookout.

OMCIB [Official MC Intelligence Bureau], Press division.

[To MathNEWS editors, please do not share my identity to anyone requesting information on the source of this article; if you are not willing to hide my identity, please refrain from publishing this article]

STUCK ON SOLVING A RUBIK'S CUBE

I've set out to solve the Rubik's Cube and to make good use of my education, I've decided to apply my mathematical problem solving skills.

My approach is using induction on an $n \times n \times n$ Rubik's cube, but I'm stuck on a step, can someone help my incomplete solution?

Base case: $n = 1$

Easy, I can solve a $1 \times 1 \times 1$ Rubik's cube without even touching it. In fact, a person with two broken arms could solve it too.

Inductive assumption:

The $n \times n \times n$ Rubik's cube can be solved.

Inductive step:

???

How do I solve the $(n+1) \times (n+1) \times (n+1)$ Rubik's cube using the inductive assumption? Is there something wrong with my approach?

License2Derive

INNOVATIVE SPECIAL INTEREST GROUP TO MEET FOR 13TH YEAR

PITTSBURGH - On April 1, 2019, at 17:00 EDT, the world's leading multidisciplinary thinkers will meet at Carnegie Mellon University to attend SIGBOVIK, the ACH's flagship annual conference. 2019 marks the thirteenth year of the conference since its inception in 2007 by Harry Q. Bovik, the computer scientist after whom the special interest group is named.

This year's submissions have already been received, and are anxiously anticipated by the global audience tuning in to the live YouTube broadcast or attending in person. All papers can also be found at sigbovik.org. Readers of mathNEWS are encouraged to explore past proceedings.

The self-selecting community of participating researchers has received praise for shining light on a growing list of lesser-known fields historically suppressed by mainstream academia, including but not limited to deep space navigation, perplexity theory, natural intelligence, and symmetries of dance.

Yet most notable in SIGBOVIK's diverse scope is the cutting edge study of Turing completeness. Presentations by researchers of the caliber of Tom Wildenhain have revealed atrocious anti-completeness guideline violations by consumer software (which the offending parties have yet to address). Recordings of these presentations have amassed hundreds of thousands of views, and provide excellent publicity for the modest Association.

At this point you're probably picking up some warning signs that this is an April Fools' article.

April Fools! It isn't! But in all seriousness, how has this never come up before in mathNEWS?

SIGBOVIK is very real conference run by the very real Association for Computational Heresy. Harry Q. Bovik is a real person (but nobody knows his middle name), and if you were wondering, Pittsburgh is a real city.

SIGBOVIK is the most fun you'll have on April Fools this year (and for however long it continues), and I was not paid to write this article. If you are looking for a reason to believe me, simply Google "Turing Completeness of PowerPoint" and see why.

Merry 32nd of March,

GETTING OVER IT WITH BEEFYEFY

Are you a UWaterloo student going through a breakup? If counselling services aren't available to you—and if all your friends are too busy to listen to you cry for the 78th time—I humbly suggest you read this list of (non)-proven breakup-getting-over strategies:

- Go to the Bomber! You can drink your sorrows away and meet someone new ;)
- Wait the Bomber is closed? That's messed up. I wonder what they'll put back in its place. Make a list of what you think should go there, idk.
- Join UWaterloo's Kpop dance club, Limelight—nothing screams "over it" like a ridiculously well choreographed 10-person dance routine.
- Head to Paul Puncher and buy yourself some fancy-pants shirts and maybe some actual fancy pants while you're at it. If you're going to weep deeply every time you see your ex's face on Instagram, you might as well do it in style, you baller you!
- That's about it, I'm sorry. mathNEWS loves you. [Editor's note: the opinions expressed within this piece do not reflect the entire mathNEWS production team]

BeefyEefy

OFFICE POLITICS PD ANNOUNCED FOR ALL PLATFORMS, COMING Q1 1000BC

After their hit games "Resume Builder" and "Match Zero: The Mistake", many critics have wondered how CECA Studios will be able to match the high quality and standards expected of their game. However, we at MathNEWS are proud to announce that their new game "Office Politics" meets and shatters our expectations. For full details see the review by CC.

Following the large amount of controversy for the now canceled game "Sorry: Not Sorry", Office Politics looks like an attempt at a new start. Breaking into the Powerpoint simulator genre, it looks ready to revolutionize that genre. Still requiring a final touch up, the game be be available in the first quarter of 1000BC.

POTENTIAL CAMP LOCATIONS FOR HOMELESS STUDENTS

Haven't secured housing yet for next Fall? Neither have I. Well it's only going to get harder since it's so late at this point. In fact, you're going to have to consider going homeless, and after considering this, I've come up with some viable plans to manage a homeless term.

TENT LOCATIONS:

If you're shooting for high grades, every night you want to set up camp in the room of the first class you have the next day. Then there's no way you can be late to class, even if you sleep in, because you're already there!

If you're looking for nourishment, just set up camp at any of the Tim Horton's and light a campfire then invite any Timmies customers to gather around and share a drink or some food with you.

If you're looking for a relationship, set up camp at any other university. This is necessary but may not be sufficient.

For comfort, the best location is clearly MC Comfy.

UTILITIES:

All utilities can be covered by UWaterloo at no charge:

Showers: Go to CIF or PAC for washing up

Electricity: There are outlets everywhere.

WiFi: WiFis everywhere.

Heating: Go under the wing of Mr. Goose if your cold. Canada Goose jackets are famous for their warmth, and this should be even better.

Laundry: Every residence has a laundry room, but I know that there is \$1 charge to them. However, do you think anyone watches their laundry like some sentry? Just find a machine that has already been paid and activated, take the clothes out, and put yours in instead.

AMENITIES:

Wherever you set up your tent on campus, you'll be within walking distance of Waterloo gyms, libraries, food services, and police services (which may or may not be a good thing in your case).

FOLLOW UP

BY CIX



TURTLENECKS: A MANIFESTO

[Editor's note: this article was printed in part in v139i5, but its end was cut off due to an editorial mistake. It is now being reprinted in full so that all may enjoy these warm turtleneck opinions.]

A couple weeks ago I was given a hand-me-down turtleneck sweater from a family friend. It's a beautiful, buttery white colour, and the knit is thick, and soft without being overly warm or itchy. It's the sweater that a person can only DREAM of seeing, let alone owning.

For the uninformed out there: turtlenecks are objectively the best-looking kind of cold-weather top that exists on this planet. I'm so dead-ass serious right now I could kill a man. The person who invented turtlenecks was doing the Lord's work; if Jesus was alive right now, he'd be wearing a turtleneck. Everyone looks good in a turtleneck. Everyone. It's fucking science. Their slim fit is revealing, and yet they somehow manage to leave just enough to the imagination. They accentuate and elongate the neck — one of the most sensual and beautiful areas of the human body — as well as draw attention to the face. This is just from my own personal observation, but as soon as anyone dons a turtleneck, they become AT LEAST 1.13x hotter. Both temperature- and aesthetic-wise,

Lastly, they're a timeless and classic item that you never have to worry about going out of style. No more looking back on pictures of you from seven years ago and going, *Oh my God, what was I even thinking of when I was wearing that!* Instead, you'll be admiring what a sexy beast you were in your youth. Maybe once when you're dead and gone, one of your ancestors will post your photo to r/OldSchoolCool and it'll hit the front page on whatever the Reddit-equivalent is a hundred years from now!

"But turtlenecks make me look like a skier/pretentious hipster/my friend's great-uncle circa 1975," as some well-intentioned but ill-informed opponents of the turtleneck will protest. Indeed, it's unfortunate that the turtleneck has come to be associated with some unsavory archetypes over its centuries-long history. But we have to be the change we want to see in the world. We have the POWER to change those associations ourselves. No more shall the turtleneck be restricted to the domain of snobbish film majors or Steve Jobs — it's 2019. The democratization of the turtleneck is here, and I am proud to be one of its heralds.

Admittedly, turtlenecks aren't made for everyone, such as those with sensory sensitivities. Hell, if it's been a long while since you've worn a turtleneck, you might have a rough time of reacclimating to it, especially if you're ticklish 'round the neck. Like, right now I'm wearing my white turtleneck and although I love it to pieces, I've been DYING the whole day. I haven't worn a turtleneck since I

was nine years old — our reunion's been long in the making. But I'm powering through the discomfort, the sensation of being choked, because I KNOW that without pain comes no gain. Turtlenecks are the pinnacle of human creation. I'd walk through Hell and back for a turtleneck. Turtlenecks. TURTLENECKS!!!

So, please, if you're reading this: consider wearing a turtleneck while we're still in season. It'll make you look hot, I promise. That's all.

Finchey

UPDATE: APPLY TO GET AN ANIME-LOVING GF

Last issue, πllow Princess and I put out an ad for our friend Eggplant Dildo to find her a weeb boyfriend. Unfortunately, this position has since been filled by an external applicant. We thank everyone who applied, and wish them good luck in their future applications.

Also, for the record, the only part of that article that we made up about Eggplant Dildo, which is her actual nickname, is that she has a big fuchsia strap-on. It's actually more of an aubergine purple.

Sandwich Expert

ISSN 0705-0410

UW'S BASTION OF ERUDITE THOUGHT SINCE 1973

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gridCOMMENT 139.5

Greetings, denizen of math. It seems you have survived most of this season's weather hardships, but as April is fast approaching, we all know that the evil machinations in ~~Needless Hell~~ Needles Hall will begin to cram each and every one of us into halls in order to extract their helping of knowledge you have all hence harvested. We must not allow these money-sucking overlords win in their nefarious task, for you must squirrel away some of the forbidden fruit you gathered into the corners of the mind, away from their prying eyen and evil devices, so when liberated you can later blossom successes. Quick, here they come; look busy by doing this brain teaser prepared.

I would like to mention that we have one submission for the reprint of the previous grid. I have instructed the mathNEWS editors to place the response received somewhere else in the issue. [Editor's note: Sorry, we got lazy and forgot.] Thank you again to our ovine respondent for this submission. I'm not sure how you might deign to redeem the allotted prize due to obvious reasons—although I will leave the specifics to our editorial overlords (not to be confused with the administrative overlords from the first paragraph).

Next, I would like to remark to Extensor Carpi Radialis Longus that the 6PM deadline is strict and due to technical limitations (e.g. the mathNEWS editors only bribe me with pizza once a fortnight) we are unfortunately unable to consider any late submissions. You are welcome to have checked your solution with what had been printed last issue.

Because it bears restating, gridWORD submissions can be made to the BLACK BOX (located by the central doors on the 3rd floor of MC, near the racks) or electronically by email (to mathnews@gmail.com) before 6PM on Monday, April 8th 2019. To be eligible for a prize, a submission should include a name and optionally a moniker, the former to affirm your identity lest the prize be given to someone undeserved, and the latter to be published in this column. The winner of this prize is determined by the most correct grid solution submitted; in the event of a tie, the tiebreaker is my favourite answer to this issue's gridQUESTION, "Which math course would you add to the UWaterloo curriculum?"

May the light of the Daystar pierce the shadows of NH,

Zethar

Across

1. Ploy
7. Popular bubble tea flavour
11. Blue
14. Guarantee
15. Adjectival suffix
16. "Bravo!"
17. STAT 443
19. Trick
20. Cooking meas.
21. Greek island
22. Korean dish
24. Used to create things physicists study
27. Melons
30. Stair part
31. Mac company
32. Midmorning
33. Mooniyaang city abbr.
36. PMATH 348
41. ^[
42. Flatscreen predecessor
43. Extension of factorial
44. {{{}},{{{}}}
47. Way of thinking
49. PMATH 351
52. Secrets
53. ð
54. Have you been contributing to yours?
57. Pain unit
58. CO 442
62. Drink suffix
63. Emerald Isle
64. Something profs want the first of in a paper
65. Scarlet
66. Active one
67. Debug, in other words

24. Gloomy atmosphere
25. Under cover?
26. Street _____
27. Eating-house
28. Bee
29. Wearing glasses
32. Explosive
34. Proctor's call
35. Aspiring atty.'s exam
37. Game plan
38. Calculus calculation
39. Sanskrit fire
40. Chaps

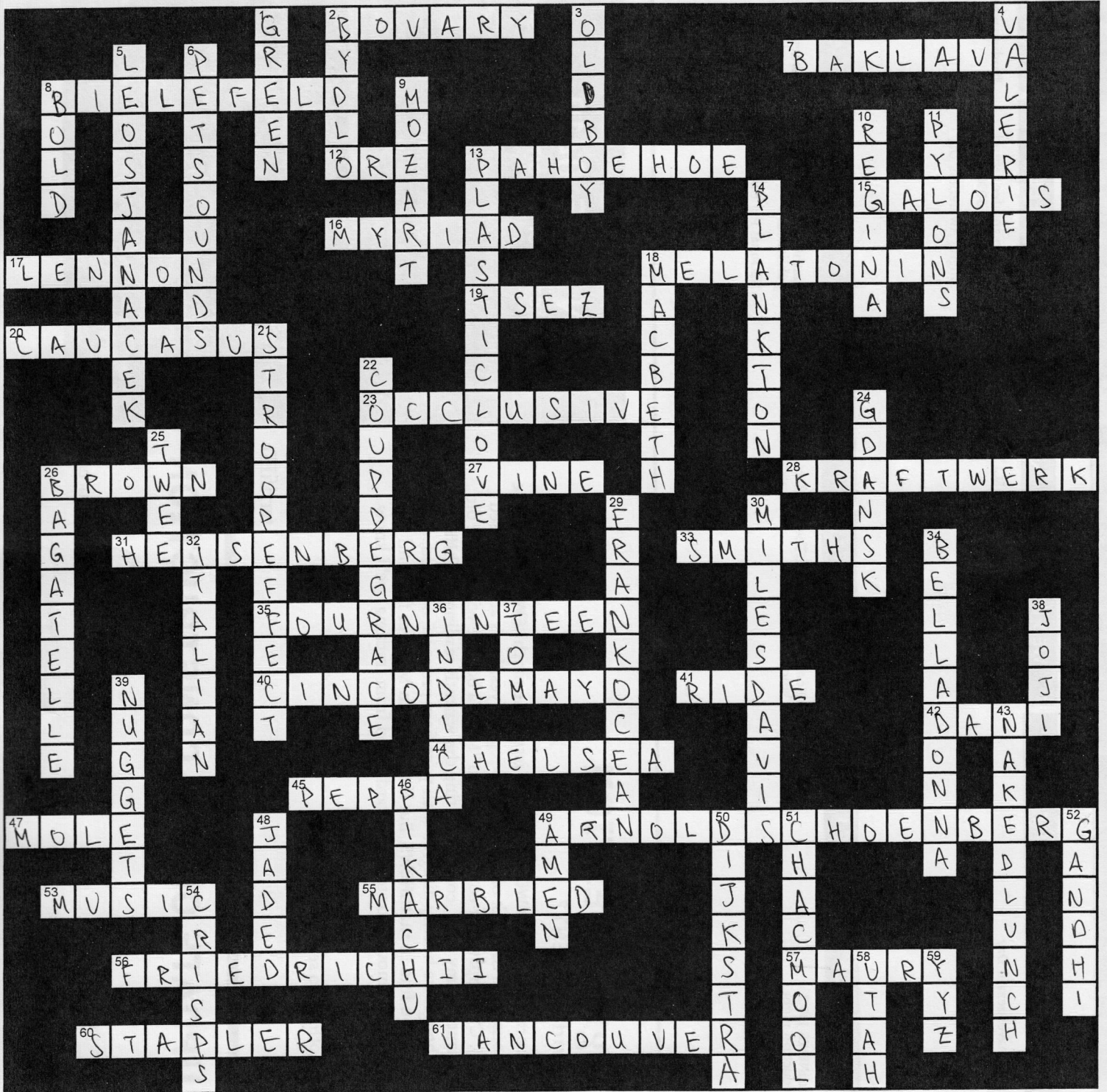
45. An Intel 80x86 assembly language
46. Extended
47. Fable
48. Babylonian goddess
49. Kind of gun
50. Cut into
51. Persona non grata
54. Small salmon
55. Poke
56. Combustible pile
59. Verb for you
60. Viet river
61. &c

Down

1. President known for being large
2. MOP 1/100 units
3. Firm abbr.
4. Editor puzzling day, abbr
5. Organization which has a computer color standard
6. Body focal point
7. Rwandan people
8. "Aladdin" prince
9. Irritating
10. Traditionally, rites used in the worship of Bacchus
11. US demographic group
12. Island greeting
13. Jeans material
18. Drunkards
23. Southern Nigerian Language

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

LAST ISSUE'S gridWORD SOLUTION



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

lookAHEAD

SUN MAR 31

MON APR 1

April Fools!
Party with the Math
Profs
6-9pm @ Fed Hall

TUE APR 2

Campus Access: Rights
and Resources

WED APR 3

German and Austrian
Masterpieces:
orchestra@uwaterloo

FRI APR 5

End of lectures

SAT APR 6

Your last weekend to get-
shit+feeee-relax

SUN APR 7

Your last weekend to get-
shit+feeee-relax

MON APR 8

prodNIGHT v139i6
Pre-examination study
days

TUE APR 9

Pre-examination study
days
Drop with WF ends

WED APR 10

EXAMS BEGIN. GL, HFI

THU APR 11

STUDY

FRI APR 12

mathNEWS v139i6
published
Online class examination
- day 1
STUDY

SAT APR 13

Online class examination
- day 2
STUDY

MATH PROBLEM OF THE WEEK

Hello mathNEWS, here is your new problem of the week:

Let $\triangle ABC$ be an acute triangle (that is, a triangle with all angles acute).

Let D be the intersection of the perpendicular bisector of $[BC]$, with the angle bisector originating from A . (That is the ray originating from A , cutting the angle (AB, AC) into two equal angles).

Prove that A, B, C, D are concyclic. (i.e. there is a circle containing all four of them)

Most of you might not be familiar with Euclidean geometry, but this exercise is beginner friendly and doesn't require any knowledge of any theorems except the one given below, and you can always drop by the Pure Math Club for more Hints.

As usual, exchange your solutions in the Pure Math Club room for a free chocolate bar!

Hint:

You might find the following theorem useful.

Let $ABCD$ (in that order) define a convex quadrilateral, then the following are equivalent:

1. A, B, C, D are concyclic
2. $(AB, AC) = (DB, DC)$ (as angles)
3. $(AB, AD) + (CB, CD) = \pi$

PMC Prez

otherNEWS is made
technically possible
by club executives of
the Math Faculty.
I say "technically"
because if they had
sent us more news
this week, this box
wouldn't be here.

THE mathNEWS EDITOR WHO
PUTS THE "NEWS" IN mathNEWS