"WHAT IS YOUR FAVOURITE IMAGINARY PLACE?"

SERIOUSLY, GUYS? IS THE MATH COMPOUND NOT ENOUGH FOR YOU?

Well, looks like it's exam season once again. Hooray. I was so looking forward to the now desolate ruins of a once busy campus, the thick clouds of silent tension hanging in the air no matter where you go, the reduced hours of the Right Angle Café. From now to the end of April, our finals will haunt us from the shadows as daunting spectres of trial, waiting until the moment is right (or, y'know, the schedule says so) to challenge us, and demand that we prove our newfound knowledge. Until then, **there is no escape.**

But, as I said ~~a decade~~ only a couple months ago (seriously?) in **mathNEWS** 133.1, so too is there no escape from **mathNEWS**! Your unwitting hero in times of fear, your Shining Bastion of Erudite Thought[1], **mathNEWS** appears once more to cast a blinding ray of glorious comic relief across the shadow of this dark season!

And while this issue isn't as jam-packed as some of our previous ones this term, it's still more than a worthy read. We have the thrilling conclusion to _Indecipherable Emoji Detective Thing_, some interesting web history, some actual discussion about actual mathematics, some stock-market-esque predictions on school memes, and more of the uniquely insightful inanity you've come to expect from **mathNEWS**.

On that note: both the **mathASKS** and ~~prof~~**prezTHOUGHTS** columns featuring Dr. Feridun Hamdullahpur (University President) have been delayed. You can read more on that later on in the issue, but in the meantime, since we _do need_ a **mathASKS**, yours truly will be taking the hot seat this issue. Ever wonder why I got into Initial D? Which books I like to read? My opinion on shorts? No? Well, even so, these and more unnecessary questions are answered on an unspecified later page of _this very issue_!

Anyways, on a sadder note, it's time to sign off for this term. Thanks for sticking with us, and helping us make **mathNEWS** better than ever before; we couldn't have accomplished everything we have this term without you all. Good luck on your finals, and have a great summer, everyone!

George Lambrou
Editor, **mathNEWS**

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1. Is it just me, or does "Shining Bastion of Erudite Thought" almost sound like a Yu-Gi-Oh! card?

Altr	Underneath the radical.
Beyond Meta	The future where all my hopes and dreams are fulfilled.
Paru-Paro	Feridun's Golden Palace.
Soviet Canadian	A land where everyone is productive and happy.
waldo@<3.LE-GASP.ca	A place where my dad is alive, I have graduated already am happy, and the trains are our glorious leader.
Hanzo	Rick's memories from Season 3 Episode 1.
HatOFChocolate	Alternate dimension #42, where the world is a beautiful place, people are only unhappy if they want to be and
2.3.5.7.735.2333722.	Leftbook.
Takin	Republic City.
Zethar	You know, there aren't a whole lot of places that would qualify for the criterion "favourite" and imaginary.
	(For a more serious answer: Ravensburg.)
πρ	Vulcan.
Diminutive Rex	Gielinor.
Generic Author	The reality.
ItorED	Home.
ExtrovertED	Idol Hell.
George Lambrou	The universe in which I've already graduated, with a 100% grade in **mathNEWS** on my transcript.

ARTICLES OF THE ISSUE

This week's Articles of the Issue go to:

- _Ways to Browse the Web in 1994_, for its farfetched-yet-intriguing facts about the internet;
- And _UWaterloo Meme Trading Report: 1175 Meme Value Forecast_, for being a hilariously over-researched report on its ridiculous subject matter.

Congratulations to our winners! If you're on campus _before_ or meeting us _at_ our End-of-Term event, email us so we can make sure to get you your prizes.

George Lambrou
Editor, **mathNEWS**

🔍 #4

⬅END

TO BOLDLY NAME WHAT NO ONE HAS NAMED BEFORE

HOW ONE FORMER WATERLOO STUDENT MADE HIS MARK… IN SPACE!

I'd just like to give a special shout out to a University of Waterloo alumnus, James "Jim" Freemantle. Jim is currently a scientist at York University, having worked on remote-sensing projects for such endeavours as the Phoenix Mars Rover, and the recent OSIRIS-REx probe, which is heading to the Bennu asteroid in and attempt to unravel the origins of life on Earth.

In honour of him and his work, the ~~space gods~~ **International Astronomical Union** has chosen to name minor planet 129985 "Jimfreemantle". Congratulations, Jim!
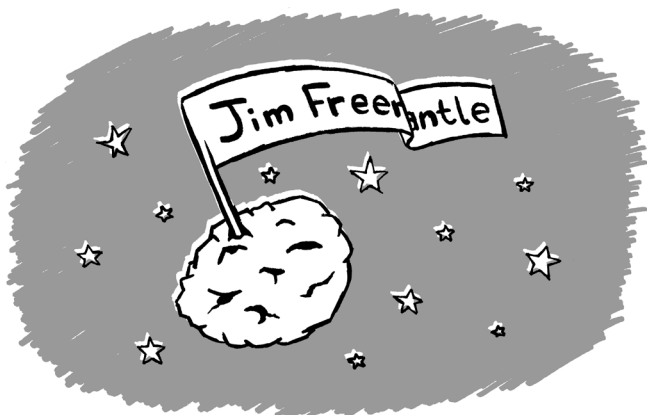

FIGURE 1. *This writer's rendition of 129985 Jimfreemantle.*

GENERIC AUTHOR

FOURTH-YEAR DESIGN ENVY

Seeing all those Fourth Year Design Projects over the past month has made me envious at those engineers' accomplishments in the last year of their degree. Math faculty has no such analogue. Not that that's our thing. For we tend to roll digital here in Math, especially the computer scientists. (Who are not actually scientists, and, alas, the CS curriculum being as much about computers as astronomy is about telescopes.)

We could have fourth year projects if we wanted to. Is P=NP? Sure, why not? Make a display board of your alleged theorem and give a presentation. Spin off a venture based on the (patented!) algorithm and accelerate optimization problems the world over. Travel the world - not as a salesman, alas - and acquire funding as you square the circle. Stretch your runway, get that series F (for #fail) funding round and never IPO. Talk about blockchain and AI, pilfer trade secrets to get acquired by Uber and run that sleaze pit into the ground before they run more red lights.

Can engineers do that? Sure, but they have ethics. We don't. That is, we do not have an ethics course in our curriculum. But that's okay. We don't build bridges. We just burn them. Designing algorithms that execute trades at frequencies too cool for school. Hyperloop ain't got nothing on us; when our codes crash, we can take down entire markets and nations. International relations ain't safety critical. No one bleeds when economies tank. Only tanks on the streets. We don't certify mission critical to guard against revolution.

The ring. That Ring. They acquire their ring in a ceremony almost worthy of Harry Potter. Though it doesn't make them invisible or all powerful, they nonetheless go through a rite of passage. We eat (not so humble) pie every term in ever unconvincing approximations of π. We do not celebrate e for excellence, for that is ever within our receding imaginary matroid.

So dear reader, what has this mathematical misanthropy wrought, except fear and loathing in the halls of MC? Do you beg to differ? Are your side projects worthy of their fourth year projects? Their labs are no match for our hacks. Let them bleed, for thou shalt lead!

KELSEY FANNING

REGARDING mathASKS 133.7

Hello to all mathies, **mathNEWS** enthusiasts, and people who just picked up this paper because the cover was brightly coloured. As some of you were aware, we've done some advertising to let you know that we were going to publish a **mathASKS** from Feridun Hamdullahpur, President of the University himself, in this issue.

Unfortunately, this is going to be postponed. The truth is, we editors were so excited that we were going to publish the President himself that we got a little bit ahead of ourselves with our advertising. Part of this was due to the scope of the questions asked by our authors. While other professors were asked mostly questions that were either humorous, related to their field, or strictly opinion-based, having a chance to appeal directly to the President prompted our writers to ask broader and more difficult questions about the culture of our university, and more serious issues that they would like to be addressed.

Obviously, this type of question is much more difficult to sit down and dash out an answer to, and the President understandably wants to take some time to research and give more well-reasoned responses. We are hardly going to complain if the President of the University wants to take longer and thoughtfully address concerns raised by students. We have printed the list of questions from our authors here, so you can see what sorts of issues the President is going to address.

Hopefully, we will be able to publish our **prezTHOUGHTS** in the first issue next term, but I don't want to mislead our readers – it is possible that it will be delayed further. **profTHOUGHTS** is only in its first term, and we the editors are learning a lot about the differences between bribing students with pizza to write anonymous articles we can unilaterally edit, and working with professors to get insightful responses. Who knew, right? We plan on adjusting our timelines in the future to avoid advertising things that we have to turn around and postpone.

We appreciate your indulgence. We all want to make sure **mathNEWS** lives up to the standards you've come to expect. We're not sure what those standards are, but we're sure they exist.

SEE YOU NEXT TERM,
TOBEDETERMINED

mathASKS THE PRESIDENT
OUR QUESTIONS FOR "THE MAN HIMSELF"

THE EDITORS, ON BEHALF OF R/UWATERLOO

How does it feel to be an internet meme? Is there anything that you would like to say to or ask those who enjoy and/or make memes of you?

HATOFCHOCOLATE

As a soon-to-be-Alumni, why should I donate to UW? It seems like only Engineering buildings are under construction, and Math/CS seem to be chronically underfunded. (For instance, next term's 400-series courses are horribly over-enrolled.)

GBAD

When will something be done about the lack of study/group work spaces on campus? There never seems to be enough useful space (outlets, table spaces, group work areas) available for students.

THE EUROBEAT-'EM-UP

A good number of us have ideas that we think could help our school improve in a number of areas, but feel like we have no outlets to get them heard. How might one approach bringing such an idea directly to you?

SHAY BLAIR

What are your feelings on UW's reputation as a school that isolates and overstresses its students? Are there any concrete plans to change this (instead of vague reassurances)?

LIFEINSURANCECANADA (VIA REDDIT)

Who's your favourite mathematician? What's your favourite theorem? What's a cool application of math that you use in your job?

MECHEM20 (VIA REDDIT)

Would you consider restoring full scope and authority to the Ombudsperson role? Right now there's literally no one we can go to and get effective change where it's needed. Things just seem to be getting worse along multiple lines where the community cares about an issue, and the UW administration doesn't. Our only recourse these days is a petition, which only works for high-profile issues.

VICEROY BUTTLERFLY

Why will the Registrar's Office only zero-weight a term if you do perfectly on the next term? This seems to imply that illnesses are only valid if they can definitely end, which doesn't fit the experiences of students with chronic issues.

NEATOBURRITO

I saw you walking into LCBO as I was walking out about two weeks ago, and it was actually my first time seeing you in person. What's your recommendation for a good cabernet sauvignon? Or are you more into scotch? Craft beer?

SCYTHE MARSHALL

Is it possible that instead of making more mental health services available and publicized, we should focus on making post-secondary education a less-unhealthy pursuit?

DIMINUTIVEREX

How do you think the university can get better at making the students feel as if the university cares about them and their success?

WALDO@<3.LE-GASP.CA

While UW is very well known for its STEM-focused programming, will the same investment and promotion of its Arts and Humanities programming be made in the future?

ZETHAR

Given the (relatively) recent focus on campus unity and spirit, why does it seem that the finances of each faculty must be secured separately? That seems to be saying one thing, and doing another.

❤

Do you still provide free hugs for former students on Senate?

A CRAFTY PLAYER

Would you come to MathSoc's Games Nights?

NAMELESS GRAD STUDENT

Do you still try to do research? If not, do you miss it?

AN ANONYMOUS MATH STUDENT 1 (VIA EMAIL)

Why are advanced-level first-year math courses considered equal to the mainstream ones when applying for co-op? The advanced-level ones contain a lot more content, and are a lot more work than the regular-level courses; why don't they provide benefits to students who use them to apply for co-op positions?

VERSATILE PARSLEY

In academia, the measure of a student's performance is grades. In Waterloo, it seems that we also have co-op jobs as a measuring stick. Western society also measures people's worth based on wealth, prestige, fame, etc. We see lists like "Top 30 under 30" and "Forbes World's Billionaires List" and they constantly remind us that society celebrates these things. Many of the students here base their self-worth on their grades and jobs, and it leads to misery. What do you think determine's a person's worth?

GENERIC AUTHOR

What is your dream breakfast? Like, your no-holds-barred, all-you-can-eat dream breakfast, real-world feasibility be damned. Go wild.

AN ANONYMOUS MATH STUDENT 2 (VIA EMAIL)

Why does the school have so many engineering buildings, and so few math ones?

GEORGE LAMBROU

Mr. President, this term has been a big one for **mathNEWS**. Our writership has expanded to include not only more students, but professors, advisors, and university Presidents too; the paper has been redesigned from the ground up not just for readability's sake, but to make it easier for future editors to actually create and publish it as a quality product; I've been working with the Dean of Math's Office for months now to sort out the mess that is our paperwork and assure **mathNEWS'** continued existence; I've given three brand-new Editors a hellish, trial-by-fire training experience, also to ensure **mathNEWS'** continued existence; and finally, I've spent far too many late nights in the **mathNEWS** Office to count, so that when we faltered, I could still try to keep the deadlines met, all to preserve a valuable piece of school history.

In recognition of all of this hard work, and the sanity we've sacrificed doing it, I respectfully request that the University consider awarding us Editors school credit for our efforts.

THE STUDENT BODY OF THE
FACULTY OF MATHEMATICS

math**ASKS** 133.7
FEATURING ~~PRESIDENT FERIDUN HAMDULLAHPUR~~ EDITOR GEORGE LAMBROU

So last issue, we asked you guys for questions for the President, and *boy* did you bring your A-game! We ended up with a long list of well thought-out, hard-hitting questions for the President to answer for us. So hard-hitting, in fact, that the President's Office wants to take the time to come up with well-researched answers for you guys instead of just writing something off the cuff. So, congratulations! You guys officially broke **mathASKS**, and it's not even a term old yet. Great job.

Don't worry though, because in lieu of responses from the President, *I'll* be filling the **mathASKS** shoes this issue. After all, you guys need something to read, I need attention — this works!

ZETHAR: YOU SAY THAT YOU WANT TO SEE ME WRITE AN ARTICLE USING CUNEIFORM; HOW CAN I TRUST THAT YOU WOULD BE ABLE TO DELIVER UPON THE DEED WHEN YOU HAVE SO MUCH TROUBLE WITH LESS COMPLEX UNICODE BLOCKS LIKE POLYPHONIC GREEK?

One, we don't have trouble with polyphonic Greek, I just made a typo when setting your **gridWORD** in issue 133.5. Two, because you said you *wanted* cuneiform, I made sure we could *do* cuneiform.

Speaking of, I'm still waiting, Zethar.

HANZO: WHAT INSPIRED YOUR LOVE OF INITIAL D?

My brother. He's an automotive genius with a penchant for Japanese imports[1], and so naturally he couldn't get enough of Initial D when he first started watching it a few years ago. He always kept playing its eurobeat soundtrack around the house, and since I liked the music, I thought I'd try out the show. Needless to say, I wasn't disappointed.

HATOFCHOCOLATE: HOW HAS CELEBRITY STATUS (AS EDITOR OF math**NEWS**) CHANGED YOUR LIFE?

You grossly overestimate the prestige that comes with being an editor of **mathNEWS**.

SOVIETCANADIAN: HOW MUCH DO YOU LOVE SONIC '06? HOW DO YOU FEEL ABOUT FUTURE math**NEWS**-IMPRINT RELATIONS?

There was no Sonic the Hedgehog game released in 2006. It never happened. Sonic blew out the candle and erased it from time. I'd say "end of story", but no story ever existed, so yeah. Sonic Forces has me *very* cautiously optimistic, though.

As for Imprint relations, it seems as though one of next term's editors has some strong ties to our younger sibling, so I think things'll be alright for the time being.

THE EUROBEAT-'EM-UP: WHAT DO YOU THINK OF math**NEWS**' INCREASINGLY PROMINENT STATUS AS A BACKDROP FOR STUDENT/FACULTY DISCUSSION?

I'm not gonna lie, I could say both good and bad things about it. On the one hand, **mathNEWS** has always been known for its high volume of comedic nonsense, and deviating from that has felt more than a little odd. That said, the faculty and administration of our school are definitely taking notice: just last week, the Registrar's Office contacted us about "Register Your Discontent" (a review written by an unhappy customer that we published in issue 133.4), asking to get in touch with the writer so that they could address their experiences and improve their services based on their feedback. This is a *perfect* example of the kinds of change we could see from the school if we can keep a respectful discourse going between students and faculty, and the student-written nature of **mathNEWS** makes it a great place for that.

All in all, I'd say it's a good thing. Growth requires change, and so I see our newfound discussion forum role as **mathNEWS** simply growing to better address the needs of its student body.

BEYOND META: WHAT BOOKS DO YOU LIKE TO READ?

I enjoy what I think to be a good mix of both comic books/ graphic novels and regular written literature — most of it in the realms of sci-fi and fantasy — but occasionally I'll read something a little more reality-bound (like Gordon Korman — I used to love him when I was younger). The books I find myself reading most often, however, tend to be more instructional: volumes on programming languages, circuitry design, complex origami, etc. Our world is already one of great variety, and while stories of other places are fun, I can never fully relax knowing that there's so much to learn and do on our own vast planet.

GEORGE'S GIRLFRIEND: GEORGE, NO ONE HAS SEEN OR HEARD FROM YOU SINCE JANUARY. YOUR FAMILY IS WORRIED, AND SO AM I. WHEN ARE YOU COMING HOME?

mathNEWS needs me, dear.

DIMINUTIVEREX: WHAT'S YOUR OPINION ON SHORTS?

That youngster on Route 3 is definitely right: they're super comfy, and really easy to wear. I find that a pair of loose swim shorts with zipper pockets (if you can find anywhere to buy them) are especially great for biking.

As a nice plus, I think they make my legs and butt look good too.

GENERIC AUTHOR: WHERE DID YOU LEARN TO NEWSPAPER?

Mostly during high school. I had this awesome teacher, Mr. MacAskill, who taught the school's media arts, computer science, and yearbook classes. I took both years of media arts and comp sci, and sat in on one half of the year-long yearbook

class (since the other half conflicted with my calculus class), and from him I learned a ton about programming, photo manipulation, graphic design, and (of course) page layout, skills that I brought to **mathNEWS** for the big revamp we did in issue 133.4.

I guess in a way, updating the paper has been my way of doing that yearbook course I didn't have the chance to in high school, and I certainly couldn't have done it without having had such a great mentor. So thanks for everything Mr. MacAskill, and sorry for being such a pain in high school. You taught me a lot, and fostered passions that I didn't even know I had; I wouldn't be the person I am today without your patience, insight, guidance, and tolerance for home-made computer viruses.

WALDO@<3.LE-GASP.CA: WILL YOU BE ENJOYING A GOOD BREAK ANY TIME SOON? I THINK YOU'D ENJOY ONE. ☺

Oh, hell yeah — once exams are done, I am *outta* here. I want to ride my bicycle, I want to ride my biiiiike.

♪ I want to ride my bicycle! I want to ride it where I *liiiiike*… ♪

DANK: ON A SCALE FROM 0 TO 10, HOW EUPHORIC DID YOU FEEL WHEN WRITING YOUR NAME ON THE NEW WHITEBOARDS?

Okay, first off, you have **no evidence** that it was me who first laid ink upon ~~those wonderfully expansive, beautifully reflective, silica canvases~~ the crummy new whiteboards that I definitely don't even like. I mean, seriously, someone writes the name "George" on a bunch of the whiteboards, and you *instantly* finger the guy ~~with a crippling addiction to whiteboard vandalism~~ **who just happens to be named George**. You know someone else could have just as easily written my name there to frame me, right?

But I bet that for whoever it was, it felt *incredible*, like ~~I~~ **they** were back in high school, except this time no one's gonna move one board to find that the one behind has an overly-detailed mural of the whole class drawn as pirates on it.

A CRAFTY PLAYER: WOULD YOU COME TO MATHSOC GAMES NIGHT?

Well, as far as I'm aware you're graduating this term, so… I dunno. It's gonna be weird, not seeing you carrying stacks of games to the Right Angle Café every Thursday night. I'll probably make it to a couple more before I graduate.

To those of you who haven't been, MathSoc's Games Nights are held every Thursday night in the Right Angle Café (more commonly known as "the C&D"), and our very own crafty player has been running them without fail for the past four years (when he's been on his study terms, anyways). He's always got a healthy supply of snacks and drinks for anyone who wants to come out and play, and if you've ever seen the shelves in the MathSoc Office, you already know that there

are tons of great games on offer. I don't know who'll be running them as of next term, but knowing crafty, he's picked someone more than capable to do it. I'd strongly recommend that you go to at least *one* during your time at Waterloo (hint hint, professors).

TOBEDETERMINED: WHAT MAKES math**NEWS** VALUABLE?

mathNEWS publishes (almost) anything that students write, and while that does mean that we'll publish everything from your rave review of your favourite non-standard alarm clocks to scathing passages outlining the faults of your most hated board games, it *also* means that you guys have an outlet through which you can speak out — both to fellow students *and* the faculty — about issues around the school that you think should be addressed. When done properly (and respectfully), it can be a powerful vector for change, something I've already begun seeing this term. Again, I'll refer you to the results of "Register Your Discontent", simply because it's the most tangible example, but it's not the only one. **mathNEWS** is read by a considerable amount of our faculty, including the Associate Dean of Undergrad Studies, several advisors, and the Math Undergraduate Office, and to the best of my knowledge, they take what we say here seriously (well, when it's *actually* serious).

All of this adds up to a powerful platform through which students can advocate for change. Yes, we'll still publish hilarious **profQUOTES**, have a convoluted **gridWORD** at the back of each issue, and serve up a healthy dose of nonsense every two weeks, but at the same time, we'll *also* give you guys a place to say what *needs* to be said, **to the people who need to hear it**, and *that*, if you ask me, is where **mathNEWS'** true value lies.

EXTROVERTED: HOW DO I RUN math**NEWS** NEXT TERM WITHOUT YOU, SENPAI? ♥

You'll do it well, without a doubt. You guys have had some hellish training, sure, but you've made it through, and you've all demonstrated that you're more than capable of keeping the **mathNEWS** ship sailing without me. As weird as it is to say about three people I've really only known for the past three months, I'm proud of you guys. You'll be fine, and **mathNEWS** will continue to be awesome because of it.

Also, could *someone please* tell me what "senpai" means?

ITORED: WHAT IS YOUR DEEPEST, MOST INNERMOST FEAR?

My deepest, innermost fear should be obvious: it's not getting school credit for **mathNEWS**.

GEORGE LAMBROU

1. He owns a right-hand-drive 1993 Nissan Skyline GT-R. Once, he had the opportunity to take it up to 220 km/hr, and let me sit in the passenger's seat. It was indescribable.

MCDONALD'S NEEDS TO BRING BACK MULAN SZECHUAN CHICKEN MCNUGGET SAUCE

RICK AND MORTY SEASON 3 SPOILERS BELOW. CONSIDER YOURSELF WARNED.

Szechuan McNugget sauce was a dipping sauce offered at McDonald's in 1998, as a part of a promotion for Disney's then-upcoming "Mulan". More recently, the sauce was featured quite prominently in the season three premiere of Rick and Morty. Dan Harmon and Justin Roiland — the show's creators — must love that sauce, 'cause the episode made references to it many times. They often implement references to things from their lives.

This episode was set inside a simulation of Rick's memories, which was how he was able to get the sauce from a McDonald's drive-thru in the first place. At the end of the episode, Rick goes on a rant about how absolutely nothing else matters to him, except getting more of that Szechuan sauce, a desire that has become something of a meme after the episode aired on April 1st.

Today, there are many ads on eBay selling the sauce for outrageous prices. There are unofficial shirts and merchandise that mention the idea of bringing back Mulan's Szechuan Sauce. The Rick and Morty Twitter even tweeted "Please God, I don't ask for much, please let us gain enough cultural influence to force McDonald's into bringing back that fucking sauce." They then tweeted @McDonalds saying "you wanna get in on this? Call me." This resulted in a reply from McDonald's featuring a weird adaptation of Rick's catchphrase "wubba lubba dub dub", "McNugga Lubba Dub Dub". So, is McDonald's going to cave under the pressure?

Hanzo

N-2 REASONS WHY CHALK IS BETTER THAN MARKERS

- You know when chalk is gonna run out.
- The tapping the chalk makes on the board is very satisfying.
- You can erase it with your hand without worrying about your oils smudging things.
- The squeaking marker is very unsatisfying.
- (-1) Chalk breaking is mildly annoying.
- (-1) You can't write on transparent surfaces like you can with markers, which looks totally baller.

A Nonny Mouse

N THINGS NOT TO DO AS A C&D CUSTOMER

- Walk in wearing your backpack (there are at least three **NO BACKPACKS IN THE STORE** signs you'll encounter by the time you enter the store).
- Walk in without shoes (it's actually a safety hazard, sorry — we don't make the rules).
- Walk in without a method of payment (nothing is free that is located explicitly inside the store (with the exception of hot water), at least not without purchase).
- Put clean coffee cups and lids in the small garbage can. (Seriously, why?)
- Dump your old leftover coffee into the drip trays. (It's for the leftover coffee drip from the carafe, and really shouldn't be full by the end of the day.)
- Drop a whole cup of coffee in the back of the store and not tell anyone about it. (You can even lie and say that you just found it there, but please let one of us know. Slipping hazards are not fun.)
- Place your food items way too far away for the cashier to scan.
- Incorrectly state whether or not the item you have is a patty or a samosa. (It's actually pretty important to know the difference, one of these is vegetarian and the other is not.)
- Try to claim that your reused paper cup is "your own mug". (Your own mug must be a ceramic mug or a travel mug, it's really not worth negotiating with a cashier.)
- Claim that a tea bag in your own mug is "an extra bag". (Tea is $0.75 for one bag, regardless of the size of the cup/mug. An additional bag is $0.25.)
- Attempt to pay with a WatCard. (There's also at least three signs saying **NO WATCARD** that you'll encounter in the store by the time you have to make your purchase.)
- Attempt to pay with a Presto Card or a Health Card. (To be fair, I'm pretty sure these were accidents.)
- Try to convince the cashier that you're just going to buy one item after they've already closed the store. (There's a reason the store hours are posted, and cashiers still have work to do after closing.)

Sincerely,
a tired cashier.

A BEYOND META-THEOREM

THEOREM

With probability one, any conversation with Beyond Meta eventually produces a **mathNEWS** article idea. That is, let $I(x,t)$ be the random variable on $C \times [0,\infty)$ (where C is the space of conversations with Beyond Meta) that takes the value 1 if the conversation x has yielded an article idea by time t, and 0 otherwise. Then for almost every x in C, the limit of $I(x,t)$ as t approaches infinity is 1.

PROOF

Beyond Meta says, as a catch phrase, "[I/You] should write a **mathNEWS** article about that." In addition, Beyond Meta is witty (certainly wittier than me), and so as long as the conversation continues and doesn't stop due to incompetence of the other parties to the conversation, Beyond Meta will eventually say something clever, thus provoking laughter and the above catch phrase. There's the article idea. The only situation where something clever is not said by Beyond Meta is, well, when it's imperative that they refrain from doing so, for the purposes of not being a horrible person, or similar. This is almost surely not the case.

Note that technically, this is just an idea, not a priori a **mathNEWS** article idea. However, **mathNEWS** will publish almost everything (up to a null set consisting of truly offensive/inappropriate ideas), and Beyond Meta doesn't constrain themselves to bad topics, and so there are resulting ideas that are valid **mathNEWS** article ideas (potentially having to wait long enough). The proof is complete. ∎

DISCUSSION

Now, to spite all of the people who think abstract theorems should be applied… I won't apply this theorem! Why not? Because it's impossible to apply in the way you'd want to apply it. For example, Beyond Meta and I had a 3-hour Skype conversation on April 7th; however, even if you knew that this conversation wasn't in the "bad" set of conversations, you still wouldn't a priori know how long we'd have to have talked before a valid idea occurred. In truth, Beyond Meta came out of the conversation with at least eight different ideas, and I with this one, so it shouldn't take long, but the theorem doesn't say anything about that. That said, if you do want to write for **mathNEWS** but don't have any ideas, you could do worse than talking to Beyond Meta.

The moral of the story is this: a theorem may look really impressive, and might seem to say something profound, but in measure theory, the theorems are almost surely inapplicable.

Scythe Marshall

WAYS TO BROWSE THE WEB IN 1994

I learned today that you were once able to access the Web through means other than a Web browser, and I don't mean through cURL. Apparently, according to the old boutell.com FAQ from 1994 (https://boutell.com/faq/oldfaq/), you could send an email to webmail@curia.ucc.ie with "go http://example.com/" in the body (without quotes) and you'd get a reply with the web page you requested. I can imagine this working, however inconvenient, back in the day when Web pages were static. Actually, it might still work today if you ignore all the JavaScript links. Take this as an idea for the next TerribleHack.

There's a solution that's even more mind-boggling: fax. If you don't know what a fax machine is, it let you scan and send documents over a phone line to be printed out on the other end. It's kind of like email, but printed, and for some reason, it's still popular in Japan. Anyway, back then, you could call 805-730-7777 from your fax machine, select 2 and type in the 5/6-digit document ID followed by #. Your fax machine will print out the web page, and any links will be followed by its document ID in parentheses. Repeat the process for any links that you want to visit. The service was free, but you might incur charges for long-distance calls.

Take this a step further and you could set up a service where you'd accept requests by snail mail or avian carrier.

I'll just use my Web browser, thanks.

AltGr

I LOVE FROGS

Guys, guys, guys — so I was walking home last night (after production night) and it had just rained really hard, so I guess the frogs were confused? (Lots of small squishy animals seem to get confused by rain; not just frogs, but worms, snails, and slugs too!) And they were all sitting on the path! Frogs don't belong on the path, they might get hit by bikes!

So I picked up the frogs one by one, took them off the path, and put them in the grass. I love holding frogs! They're so smooth and nice and squishy. One of them got scared and kept making little frog noises at me (they sounded like beeps — I think it might have been a bomb). Another pooped in my hand.

I want a frog.

DiminutiveRex

REVIEWING THE SHADOWS

WHAT IS IT?

Shadowrun is a tabletop role-playing game of a dystopian cyberpunk fantasy future, where elves and orks shoot machine guns at each other while a troll blasts fire from her hands and a nearby dwarf tries to hack into a computer system. It's also been around since 1989, and is one of the few tabletop games to have made it to a 5th edition, released in 2013.

WHAT'S IT LIKE TO PLAY?

Shadowrun is a role-playing game in every sense of the word: there's a GM (game master) who runs the world, each player has a character, and those characters have abilities and skills. You can try anything you want, and if your action might fail, players throw dice and see what happens.

In this game, however, there are rules for nearly every situation imaginable. How do those guys shooting at you affect your ability to haul your injured friend to the getaway car? What do you do if you want to buy an illegal set of eye enhancements on the black market from a guy you just met? Can your charm and good looks squeeze just a little more money out of the corporate executive trying to hire you to rob their rivals? Flip to the relevant section of the rulebook and you'll be all set.

With so many rules comes good and bad. If your GM doesn't know the rules very well (which is not unlikely given their extensiveness), she'll either have to improvise, which may not always be easy or fun, or you'll all have to flip through the 476-page core rulebook for a few minutes every time you want to do anything, which can become quite a slog if you have to do it more than 5 times an hour.

But complexity also means depth, and with depth comes choice. Should you put a laser sight on your gun for an accuracy boost, or spend your money on a few stun grenades, which might decide whose face will end up with a fashionable new bullet hole? Hack the camera feed remotely, or risk sneaking a wired connection into the facility for easier digital access? All of these choices come with rules you'll need to follow, which lends weight to your actions.

IS THIS THE GAME FOR ME?

If you're new to tabletop RPG's, I'd only recommend Shadowrun if you have someone at the table who's played before. The rules can be overwhelming and can slow down the pace of the game if you're not careful. But if you enjoy analyzing tables to figure out the best weapons for the job, or carefully building your character into a shooting/hacking/spellcasting behemoth, then I think you'll find a lot of fun from this classic RPG.

And let's be honest: we're in the Math faculty. Since when does complicated shit scare us?

<div align="right">Paru-paro</div>

JEJEMON

If you thought leetspeak was hard to read, try reading Jejenese:

"EoszWpFhUeEhsxz.,!!Q4muXtah,?S@hnaLhaRn mh@1nt1NdH@nn N30wh Tton6 m3sZs49e kHou.,,jejeje!"

This apparently translates to "Hello po! Kamusta? Sana lang maintindihan n'yo 'tong message ko." (using the translator at http://pilipino-express.com/features/anak/836-are-you-a-jejemon.html), which translates in English to "Hello! How are you? If only you could understand this message."

The Jejemon phenomenon originated in the Philippines in 2010 as an SMS language. Oddly enough, while most SMS languages try to compress messages, Jejenese actually lengthens the message. It is differentiated from leetspeak in part by its aLtErNaTiNg CaPiTaLiZaTiOn and overuse of letters such as H, X and Z.

Someone who "jejetypes" is called a Jejemon, from "jeje" representing laughter and "mon" from "Pokémon". There are four levels of Jejemon:

Mild: eow~ p0Wh HOw zaRezu

Moderate: EOW p0wh~ hoW~ zAreZu~ iTZ beEN A loNG tym~ SincE weVE SeEn eAcH othEr~

Severe: GUDpM~ p0Wh. hoW ZaREZu~ 2nYT, n0H? itz alReADY 3 m nd u zAREzstLl aWKe JEJEJe p0wh.~ U sHoUld SleEp~ alrEAdY~ BeCauSe iT iz l8~ jeJejeJEje~

Terminal: EOW P0WH THeRe~ P0wh. NicE MEEtNg u~ JEjEjeje~ p0Wh. WTZ Ur nME, N0H?~ H0W ZarezU 2dAy JeJeje DO U THnk~ thAt~ we~ ShOuld~ Go sOMEwER, n0H?~ ur GoiNg 2 go aLREaDY,~ n0H? nicE~ mEETnG~ u JejejEjEJEJejE

These are the English examples on Know Your Meme (http://knowyourmeme.com/memes/jejemon). You can find the answers there.

That's enough. My head hurts.

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

USING MATH AND STATS TO ENHANCE YOUR BLUE JAYS FANDOM

As much as you may dislike sports, for whatever reason, the sport of baseball should still catch your attention for exactly one reason: it is the birthplace of sports analytics, the use of mathematics to understand sporting performance.

For over a century, sportswriters have been compiling stats on the players in Major League Baseball. Most of the time, it was the counting stats: things like hits, home runs, stolen bases, strikeouts, errors, wins!, etc. All of these things are things you can easily point out while at a ballgame. There were a couple of other stats that people cared about that weren't counting stats: batting average (hits per "at-bat", which is an appearance at the plate without a walk or hit-by-pitch), fielding percentage (1-(errors/chances), usually just left as a decimal and named poorly), and winning percentage (wins/(wins+losses), again left as a decimal number), mostly.

However, these stats are by-and-large outcome-based statistics, and context-independent. They tell you what happened, once the dust settled, and they don't tell you about how they happened, nor in what context. If a player went 1-for-4, you know they had a hit in four at-bats, but that hit could've been a game-winning grand slam, and that grand slam could've been a fly-ball that bounced off José Canseco's head and over the fence, otherwise known as "a ball that should've been caught". These events don't really tell you about a player true talent level, only that they made these outcomes occur, and without context or other information, they don't tell much of a story.

Today, baseball analytics (also known as "sabermetrics", after SABR, the Society for American Baseball Research) has come a long way; the things people care about now are things like "barrels" (batted balls with a particular launch angle and exit velocity), spin rates (four-seam fastballs with higher spin rates tend to be harder to hit, because they appear to rise more than the usual fastballs), and average exit velocity (for pitchers). These quantities are more controllable by the players, and are independent of the outcome; we can thank newer technology for allowing their study. If someone smashes a line drive and Kevin Pillar makes an incredible catch to take away extra bases, did that player do something wrong?

As well, people are also working on how to properly include context into value calculations. Is a line-drive single off Zach Britton in the ninth inning, down one, worth the same as a bloop single in garbage time down ten? People are trying to answer these questions by looking into the data; part of it is philosophical, yes, but the data tells us about "run expectancy", which is how likely it is to score a run in a particular base-out state. Why couldn't it tell us about more intricate states, like including opposing pitcher quality?

I won't get into more details; I'll only mention that things like Markov chains, linear weights, regression formulae, and Bayesian inference comes into play when analysing data and coming up with new ways to understand sports. If you're interested in statistics, there are active areas of public research, and opportunities to do proprietary work for companies! Surprise surprise.

Now, how does this matter for a Blue Jays fan? Well, the first thing to note is that the pitching hasn't been that bad, the hitting hasn't been that bad, and there IS such a thing as luck in baseball. Josh Donaldson is still one of the best players in the game, the pitching staff is, I promise, good, and the role players we have are mostly not black holes.

But the main way math, and generally the analytics, can help you enjoy the Jays more, is by helping you see the bigger picture, rather than swaying on every single play. Early seasons are small, small sample sizes; there is no signal here (unless a player is obviously injured). You can look in the data for signs of hope; you can look in the data for reasons to be skeptical. You can enjoy other aspects of baseball than just your team winning: if someone hits a massive home run off Marcus Stroman, you can admire the exit velocity and oogle at how improbable it might've been, instead of throwing your hat at the floor and stomping on it, saying "this is what he always does".

You can also see right through all of the falsehoods that Buck Martinez and Pat Tabler spout, game-by-game. They say a number of things that analytics have shown are not relevant, or are unproven (or inconclusive), or are old-school. Joe Siddall is better, on the radio, though Jerry Howarth isn't so much. Analytics can help you see a much broader picture of the game, and avoid the falsehoods that permeate the traditional knowledge of the sport; those two things help you be a much more reasonable sports fan.

Yes, even if you also cheer for the Toronto Maple Leafs. It could be worse; you could cheer for the Canucks.

Scythe Marshall

UWATERLOO MEME TRADING REPORT: 1175 MEME VALUE FORECAST

	1171	1175 FORECAST
FERDN	-10.86%	12.43%
MGOOS	2.32%	7.65%
PANIN	-15.06%	-12.27%
STRTP	-20.60%	-25.24%
SPNGB	WRTHL*	WRTHL*
DASNI	STBL	5.52%
E5BDG	STBL	STBL
GEOMT	5.36%	STBL
XPBRN	4.85%	7.64%

Expected forecast for upcoming term is based upon observed trends from /r/uwaterloo of previous terms, and how quickly the internet point values have increased for each meme stock, and the current state of affairs on campus and the subreddit. Specific values were generated using a custom machine learning software written in C using the Gaussian User Extrapolation with Scalar Sums (GUESS) algorithm.

WORTHLESS MEMES

The SPNGB market value is largely valueless in the Waterloo meme economy, but has high selling value in other markets, such as the UofT markets if created properly. Large profit margins can be achieved if SPNGB memes are purchased in the Waterloo market and resold at UofT markets due to the low demand, and thus low prices in Waterloo's meme market.

MEMES DECREASING IN VALUE

PANIN memes saw a huge influx in value in 1169, but was too heavily normalized and came very close to reaching forced meme status due to the high influx of low-effort posts. Its popularity became its downfall, being adopted and overused by casual users of the uwaterloo subreddit with no knowledge of correct meme trading knowledge. This overuse of PANIN memes resulted in its value being driven to exceptionally low values, and its value is expected to drop in the coming term 1175.

STRTP memes have high value only during the beginning of the school year, so long-term investors should consider buying into STRTP for 1179 to provide quality relevant memes in the fall. These memes are typically enjoyed by first-year students, where starter packs can be adapted to make fun

of frosh that wear lanyards and other relevant STRTP type content. This is a meme that should be invested with caution, as it should be bought and sold quickly to ensure a net gain in profit.

LARGEST FORECASTED INCREASE

Current FERDN market values are very low due to no OC to create fresh FERDN memes. Instead, most are based largely on stale content, which does not drive any economy, especially a meme market where innovation and disruption thrives. With math**NEWS** expected to have a Feridun QA section in an upcoming issue, an influx of fresh Feridun content is expected to increase the FERDN market index, resulting in a rise in the FERDN market value in the coming term 1175.

STABLE AND STABILIZING MEMES

The E5BDG has always been a safe and stable investment in an r/uwaterloo meme trader's portfolio, due to its relatively low usage on the subreddit in the past year. It is a stable investment that has stood the test of time, and provides a low, but consistently positive rate of return when used correctly. However, when the newest Engineering building is constructed with another bridge, a new category of memes, the E7BDG is expected to be a hot commodity, and could push the E5BDG memes out from stable into either an extremely high rate of return, or completely destroy the reputation of the meme, rendering a portion of many uwaterloo's meme portfolio unsellable.

GEOMT memes are predicted to stabilize next term, due to the gradual decline of geomeme posting frequency recently. In 1169, the value of GEOMT had surged to record levels, resulting in gold being purchased for some posters providing exceptional quality effort GEOMT memes. The most recent installment of GEOMT in term 1171 brought some value to the GEOMT value, but the popularity of them continued to wane. With the decrease of GEOMT postings we can expect to see it reach stable levels in 1175. These memes are best created by Geomatics or CS students.

POSITIVE GROWTH MEMES

MGOOS has always been a close to stable, but consistently rising meme, baffling meme economists with how a meme can continue to rise, be popular and relevant for such long periods of time. Even through periods of heavy over-use, it continues to provide fresh humorous and relatable content for Waterloo students, a fine addition to any meme expert portfolio. Check recent publications of Math**NEWS** for some fresh examples of how it can even be used in serious journalism. With nesting season approaching in 1175, Math**NEWS** meme investors expect to see a solid increase in its value, and we recommend investors to buy shares in MGOOS.

XPBRN is a relatively new meme in the global meme market, with only a few examples tailored to uwaterloo in 1171. However, its excellent format and relation to academia can be applied to both broad topics that can be relatable to

any Waterloo student, or faculty specific, tailoring to a finer audience. The versatility of this meme when created by an expert memer allows XPBRN to be featured in the top 10 uwaterloo memes.

MEME PORTFOLIO RECOMMENDATIONS

mathNEWS has created a few portfolio recommendations for different types of memers, to ensure that the meme economy of Waterloo stays healthy and is not subject to a recession. We have created three recommended portfolios - One for the effort poster, one for the baitposter, and a third for the entry memer that still wants to contribute to the Waterloo community but isn't sure where to start. These numbers should serve as guidelines, not absolute fact. The meme economy is in a very unstable and unsure state in 2017, as new memes are constantly rising in and out of popularity. New memes may disappear quickly, so it is best to capitalize on the new memes in day trading. These ten memes selected by Math**NEWS** are older memes, but continue to be mostly relevant to the Waterloo community.

	EFFORT	BAITER	ENTRY
FERDN	20.00%	10.00%	15.00%
MGOOS	35.00%	15.00%	60.00%
PANIN	0.00%	5.00%	5.00%
STRTP	5.00%	15.00%	0.00%
SPNGB	0.00%	15.00%	0.00%
DASNI	5.00%	10.00%	15.00%
E5BRD	5.00%	5.00%	5.00%
GEOMT	5.00%	10.00%	0.00%
XPBRN	25.00%	15.00%	0.00%

Vᴵᴄᴇ Mᴵᴛᴛ

HOW TO GET A BACHELOR IN MATH

Step 1: Be a girl. *[Editor's note: this is not always necessary. There are plenty of guys we know who have gotten bachelors in math.]*

```
while (# of Bachelor in Math less than < 1) do
```

Step 2: Ask a guy in math out

```
if guy says yes
add 1 to the number of Bachelor of Math
```

Alternatively, you could try to study and work for your degree... but that's super hard.

Bᴇʏᴏɴᴅ Mᴇᴛᴀ

CESARO PUNNABILITY

Let $\{s_n\}$ be a series of wordplay. We define "partial puns" to be the total of first n terms in the series of wordplay. We define the nth "Cesaro meme" to be the average of the first n Cesaro puns. Then the series is "Cesaro punnable" if eventually the Cesaro memes become constant.

arabesque

N THINGS I'VE BEEN DOING INSTEAD OF STUDYING

- Taxes! (Tip: <u>simpletax.ca</u> is free)
- Checking that I've gotten the right times recorded for my finals.
- Arranging final exam accommodations, because AccessAbility's shiny new online system lost one of my classes.
- Dreaming about what to do after finishing my exams.
- Dreaming about what to do after convocation.
- Panicking about what to do after convocation.
- Double checking that I've written down the right times for my finals. (<u>https://uwaterloo.ca/ registrar/final-examinations/exam-schedule</u> says the schedule was updated APRIL 3rd!!)
- TAXES .(Due by May 1st! Get your money back!)
- Not planning on showing up to **mathNEWS** EoT, because it was inconveniently scheduled in the middle of my last final.

HᴀᴛOғChocolate

Buhr**QUOTES**

HE'S BACK AT IT AGAIN WITH ANOTHER FULL PAGE OF QUOTES!

CS 343: PETER BUHR

66 I should know the answer to that question, shouldn't I? [student reads answer off slide] Oh, if I could read, I'd know much more.

66 I think I'm coming down with the flu, so if I fall down, just pick me up and I'll keep going.

66 The course is essentially over. What comes next is to confuse you and make you miserable.

66 You're just this thing that thinks it owns this computer and thinks you're telling it what to do. Actually, you're just a guideline.

66 The compiler spends most of its time laughing: "Ha ha, look at the code that this student wrote!"

66 Once you start learning software engineering, you start writing really bad code.

66 When the hardware runs your program, it says "Is this the best the compiler can do? Ha, I can do better than that!"

66 When I buy [Intel] i7s, I get the $1000 ones, and those aren't even the most expensive. These are the ones I can afford using your tax dollars.

66 The speed of light just isn't fast enough.

66 You use `volatile` when your program works with it and doesn't without it.

66 If you come to my office and you see chicken blood sprinkled around my office and all that stuff, you'll know I've had to deal with `volatile`.

66 These are all difficult and you'll need a wizard licence.

66 I write the world's fastest concurrent algorithms.

66 One way of not doing this is to just not do it.

66 I'll show you a bunch of examples that show you that you don't stand a chance.

66 Once upon a time, I knew exactly what my computer's hardware was doing. Nowadays, pff, not any longer. I don't think even the hardware engineers know what's going on either.

66 It's just a wild and crazy piece of silicon.

66 One day I should take a hardware course to learn more, but I feel like I'd be the bad kid at the back saying "um, sorry, but I don't understand".

66 Do you remember the Singleton Pattern? It's the only one I remember.

66 Everyone knows what an ARM is? Everyone possibly has an ARM… stuck in your pocket.

66 Pretty soon, there will only be one processor; it'll look like a banana.

66 I don't need no help from nobody. I know how to handle this.

66 I'll put up the C++ memory model and I defy you to understand one sentence. It's all gibberish.

66 Clearly people are making progress because there aren't that many questions.

66 It's like the hardware people thew this lock over the wall to us software people. We say "Ooh! What can we do with this puppy?"

66 Have you ever been in a class where the professor spent more time teaching you things that didn't work?

66 Does anyone know what a 32-bit machine is?

66 Geese flying into the engine of the Airbus A380 is more likely than this failing.

66 If you look at the papers, you'll see that they're comparing apples to ball-peen hammers.

66 The VAX computer: the best computer ever built. Nobody ever came close.

66 Who came first? They did! We stole it and made it better.

66 When you do a wait, it's beautiful, the entire universe stops. And when you wake up, the entire universe restarts.

66 You didn't hear that from me. It's pillow talk.

66 C++11: it's a bunch of trash.

66 Anything Java has, I have. Anything he can do, I can do better.

66 I have made you concurrently dangerous.

66 Go off, do your assignment, and then you can forget about it until the exam.

profQUOTES
HOW ARE THESE FEWER THAN PROF. BUHR'S?

CS 116: CARMEN BRUNI

66 Oh no no no no, nobody write this down. This better not end up in the **profQUOTES**.

66 Racket has never solved a meaningful problem.

CS 442: BRAD LUSHMAN

66 Have I just decided the Halting Problem? See, I told you this course was good.

CS 458: FLORIAN KERSCHBAUM

66 You can't deter nature. It doesn't make a lot of sense to punish an earthquake.

66 My favourite preventative measure is the dart gun.

66 Don't trust lawyers.

CS 492: ROBIN COHEN

66 I've been teaching for 32 years and I've made it to **profQUOTES**, so I'm going to have to think of something more clever to say. [Ed: Welcome to the paper, Prof. Cohen.]

MATH 136: DOUG PARK

66 [Checks his phone] Oh jeez, that's my wife. I hope I'm not in trouble.

66 Growing up with Asian parents, they were pretty hard on me, but now I have a wife for that.

PHYS 175: RICHARD EPP

66 [A complex integral remains on the board from the previous class.
Prof. Epp stares at it for about 30 seconds, then writes "42=" in front of it.
The class applauds.]

66 Huh, is "persistent" with an 'a' or an 'e'? Hmm, I don't care.

66 That's not a very good approximation. Let's fudge the data a little bit.

LIFE DURING FINALS

As the current term comes to an end, students retreat into their homes, and enter hibernation in preparation for the upcoming finals season once more.

As a result of this, many have changed their living habits to adhere to the crush of exams. I cannot speak for others, but I have noted a number of changes in my own routines:

- I used to go to sleep between 12am and 3am, and wake up between 9am and 12pm. Now I go to sleep between 5am and 8am, and wake up between 2pm and 5pm! It's like I'm in a different time zone now, but without even having to travel!
- I now regularly stay on campus past midnight. The other day, I stayed until 5am! Before, the latest I had stayed was 2am.
- I've actually purchased groceries, or made food that wasn't noodles!
- I went to the gym for the first time in two months!
- I've begun watching anime and reading manga again! I've missed these days of weebing out.
- I no longer have homework to do! Freedom is sweet.
- I am now unable to differentiate between the days of the week.

All in all, the pressure of finals has noticeably enriched my life!

Now I just have to start studying for them.

A BEAR

N WAYS TO PREPARE THE INCREDIBLE POTATO
IT'S A RIDICULOUSLY VERSATILE VEGETABLE

- Baked once or twice.
- Fried.
  - As chips (which should really be called "crisps").
  - As fries (which should really be called "chips").
  - As hashbrowns.
  - As wedges.
- Mashed.
- Scalloped.
- Boiled.
- Saladified.

THE INCREDIBLE POTATO

I basically only read the ~~prof~~QUOTES ~~Buhr~~QUOTES.

MOST PEOPLE WHO READ THIS SPECIFIC ISSUE OF mathNEWS

WHAT GETTING A VIF MEANS

A NOTE TO INSTRUCTORS

Everybody gets sick. At some point or another, life will get in the way of what you're trying to do. Sometimes, things happen that make it really hard, or even impossible to function for a while. Whether it's faculty or university policy, it doesn't matter: if you miss some part of course content, you need to get a VIF. Now, there are a few ways that this can go:

1. You are able to get one from your family doctor/ dentist/psychologist.
2. Situation warranting, you get one from the emergency room doctor at the hospital.
3. You make an appointment at Health Services to see your regular doctor to get one.
4. You see the "Walk-In Doctor" for that day at Health Services to get one.
5. You get one from a doctor at a walk-in clinic near campus.

When a student needs a VIF, the first two circumstances don't typically apply because most UW students are not from Waterloo, and most issues that would prevent you from going to class, completing an assignment, or writing an exam, do not warrant trips to the emergency room. This leaves us with options 3–5. That said, there are a lot of other factors at play:

- If a student is in the Faculty of Science, the VIF *needs* to be from Health Services, unless Health Services is not open at the time.
- During the Fall and Winter terms, it is not unusual for Health Services to be booking appointments as much as **two weeks in advance**, while most policies on VIFs require that the VIF be submitted within 24-48 hours.
- Waits for walk-in appointments can be several hours.
- Health Services is only open from 8:30am–5pm (7:30pm on some days in the Fall and Winter).
- Even with booked appointments, Health Services still can run over an hour late, especially for appointments in the afternoon.
- Each VIF obtained from Health Services or Waterloo Walk-In (the walk-in clinic in Plaza) costs $20, cash or cheque in the case of Health Services. That's two-hours of work at minimum wage, or a week's worth of groceries[1]!
- Obtaining a VIF means that students have to *physically go* to see a doctor within the required time frame, possibly presenting safety concern for the students.
- Students who owe Health Services money for anything, regardless of circumstances, cannot get VIFs from Health Services.

Another commonly misunderstood aspect of VIFs is the degree of incapacitation, of which there are four:

- Severe: unable to attend classes.[2]
- Moderate: able to fulfill some academic obligations, but performance will be/would have been significantly affected.
- Slight: able to fulfill academic obligations, but performance may be/might have been affected.
- Negligible: should not have/had any significant effect on ability to fulfill academic obligations.

The way that I have seen many doctors interpret these classifications is:

- Severe: can't get out of bed, leave the house, or study.
- Moderate: able to leave the house and go to class, but can't do much else.
- Slight: doing schoolwork and being a person may be hard sometimes, but you can still do schoolwork.
- Negligible: "You're fine! Why do you need a VIF, again?"

As recently as last term (Fall 2016) I had an instructor who stated that they would not accept VIFs that did not say "Severe" for any missed assignments or exams. This term, one of my instructors told the class that VIFs would not be accepted for missed assignments. While I understand the intent of both of these policies, I still find them to be extremely unfair and discriminatory, especially against students struggling with their mental health. To put it simply, being able to "go through the motions" is not the same as being able to think. Going to any lectures, submitting any coursework, or writing any quizzes or exams during the time that a VIF says that a student is severely impaired opens the student up to being accused of misrepresentation, an academic offence. That said, not attending lectures sometimes means that students will have no idea what material is being covered; there is no good choice.

   With the exception of the amendment that Strom Thurmond proposed exempting Puerto Rico from chapter 11 bankruptcy (see the John Oliver segment on Puerto Rico), there are reasons for every rule. I'm not arguing that instructors should ignore departmental, faculty or university rules — all I ask is that course instructors, please, be patient with us, your students, and understand that we are doing our best.

<div align="right">

Tʜᴀɴᴋs ғᴏʀ ʟɪsᴛᴇɴɪɴɢ,
πρ

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1. In the past, the response I've been given to the fact that a VIF can blow a huge hole in a student's grocery budget is that "there's a food bank". I don't think that trying to prove that I am unable to do something should result in me needing to go to the food bank when I wouldn't otherwise have to, especially when a prof might not even accept the form.
2. Another thing: if you're going to Health Services to get a VIF that says "Severe", you probably shouldn't even *be* there in the first place until you've recovered enough to make it there safely.

TUNE IN NEXT VOLUME FOR MORE gridWORD

And here we are, the final issue of the term. If you were wondering, in the end I had decided to go hot in Digitopolis to get back; you may have heard about it in the news. Either way, I had received two submissions for the **gridNUMBER**, neither of which were completely correct, mostly due to an omission. There's the obvious omission: the editors thought that they were supposed to publish the cleartext to the encoding instead of the actual **gridCOMMENT** which told you who won the previous (now twice previous) **gridWORD**. Thankfully for them, Digitopolis was a bit higher profile than I would have liked and I needed to lie low for a bit. The other omission was in the clue for 25↓, it should have started "(31↓ × (35↓ + ...", which I apparently dropped in the encoding process. Sorry about that.

The two submissions are from a "rob kevin braham travior" (encoded as "11857 4654481 19654712 6071758021") and a submission from Francis et al. The former submission had four incorrect squares while the latter submission had three incorrect squares, so by default Francis et al. wins the prize, even though they neglected to answer the **gridQUESTION**, which was "What is your favourite bit of mathematics that you would like to share?". Rob (et al.?) had answered "15078 2239 16608 211176 538 92 297 338902 46659 16608 269154 3073 8354415", which doesn't translate to anything that has to do with the **gridQUESTION**. Doing my puzzle is a voluntary action, and I most certainly don't know what a "shipr" is.

As is my tradition (backed by a healthy dose of laziness), since no prize is to be awarded because there isn't a next issue in the term, I have reprinted a puzzle from the past: in this case, from Volume 114, issue 2. Back then the crossword was a bit different: each grid included a set of Quick (standard) clues as well as Cryptic clues following the standard cryptic crossword rules. The **gridQUESTION** which accompanied the original puzzle has also been reprinted, provided that the editors don't mess things up this time.

<div align="right">

See you,
Zethar

</div>

NYAN NYAAN NYAAAN :3

This term you, may have noticed the sudden increase in the number of cat illustrations in **mathNEWS**. While my original plan was to create a series of cats drawn as food, that dream was short lived. After Kittygiri and Mr. Ice Whiskers, I found a new passion in just drawing circular cats. Maybe I'll continue the cat food series in the near future, maybe even sell them as Facebook [Ed: and iMessage] stickers someday! In the meantime, what do you think the next **mathNEWS** mascot should be? Send your suggestions to **mathNEWS**@gmail.com.

<div align="right">

ExtrovertED

</div>

elseWHEN: gridCOMMENT
ORIGINALLY PUBLISHED IN math**NEWS** 114.2

Norge er vakker denne tiden av ret.

It seems that, in keeping with tradition, I have as my predecessor before me made the Quick Clues too challenging. I received only a single submission to the Quick Clues for last issue, which was incomplete. There were twice as many completed solutions to the Cryptic Clues, although one had a single letter wrong. Of course, it could be that everyone was too lazy to submit their solution to the **gridWORD**, and so I urge you all, stop that. Apathy will not be tolerated. Submit your grids; even if they are incomplete or incorrect, you can still wind up winning! Simply inscribe your name and answer to the **gridQUESTION**, and drop a solution, complete or not, into the BLACK BOX on the third floor outside the Comfy Lounge.

Last issue's **gridQUESTION** was, "Forsooth, upon yonder hill across the moor, a shadowy figure doth approach; but pray, sirs, and madams, why does he ride with such ferocity?" Our winner of the Quick grid was Algoweird, who left six words blank, whose answer was "Car"; the Cryptic grid was completed successfully by Daniel Misiewicz, whose answer was "To get to the other side". I'm not sure how the former is an answer to the question, but it was the only submission, hence its quality is irrelevant.

The **gridQUESTION** for this issue is, "What piece of ancient eldritch lore should all Math undergrads know?"

<div align="right">

¬*perki*

</div>

gridWORD

crypticCLUES

ACROSS

1. Rigid feline on inside heartless minute
7. Ideal location up without small round vegetable details toad surrounding pi
8. Surviving memorial doesn't start within supposition to us worthy of celebration
9. We, the fifty states
10. Likely apart without lidless jar
11. Unusual rodent found in scrambled rice
14. Device lens confirmation surrounding dessert ice not starting after drug
15. Heart of gnat confusedly helps juvenile dragonflies
17. Spread without beginning makes vocal expression
20. Initially lacking pain outside emptied yacht after small agricultural mower
21. Beginning cheating is something remarkable before friend wins chess
23. Affirming instruments of sight do not begin to sing
26. Offspring monkey without small check
27. Within India without a Spanish day
29. Public display breathing out with no beer before I took a bite of headless lion
30. Something empty in an emergency room
31. A son inside a knight going west eats outside without each shortened fire setters

13. Zebra without female undergarment shortens phone after years without each breeze
16. Total endless money starts rally, calls people together
18. Unlimited treat above shortened gentlemen used in synthesis
19. Shark without headless Noah boat mans magicians
22. Heart of keys scrambles king bird's nests
24. Small science on descendant
25. Headless lives scramble after I climb vines
28. I hear inside the hotel

DOWN

1. Failing grade inside coffee shop in natural base stimulant
2. Short tea lier scrambles tile layer
3. Silent city lacking southern tip below endless tab
4. Memo in a cake not iced
5. Sounds like a drowsy sigh over there
6. First baby bottle mouthpieces, then bank password goes up before heartless sleep
7. You, sir, without me going up after scrambled purse is used without authority
12. Greed of all rice

quickCLUES

ACROSS

1. Purple quartz gems
7. Divine incarnation
8. Straight line arrangements
9. Father
10. Sphere
11. Small axe
14. Forever
15. Legendary
17. Pleasure craft
20. Banished
21. **mathNEWS** production period
23. Abhorent
26. Fancy suit
27. Transcendentally delicious
29. Fellow student
30. STAT 231
31. Dissertations

DOWN

1. Excommunication
2. Official proclamation
3. Suspicion
4. Lithe
5. Crusade
6. Victory wreaths
7. Inhale
12. Accomplice
13. Last defense
16. Disenchantment
18. Long voyages
19. Water lilies
22. Fancy chair
24. Small island
25. Hydrated silica gemstones
28. Enthusiasm
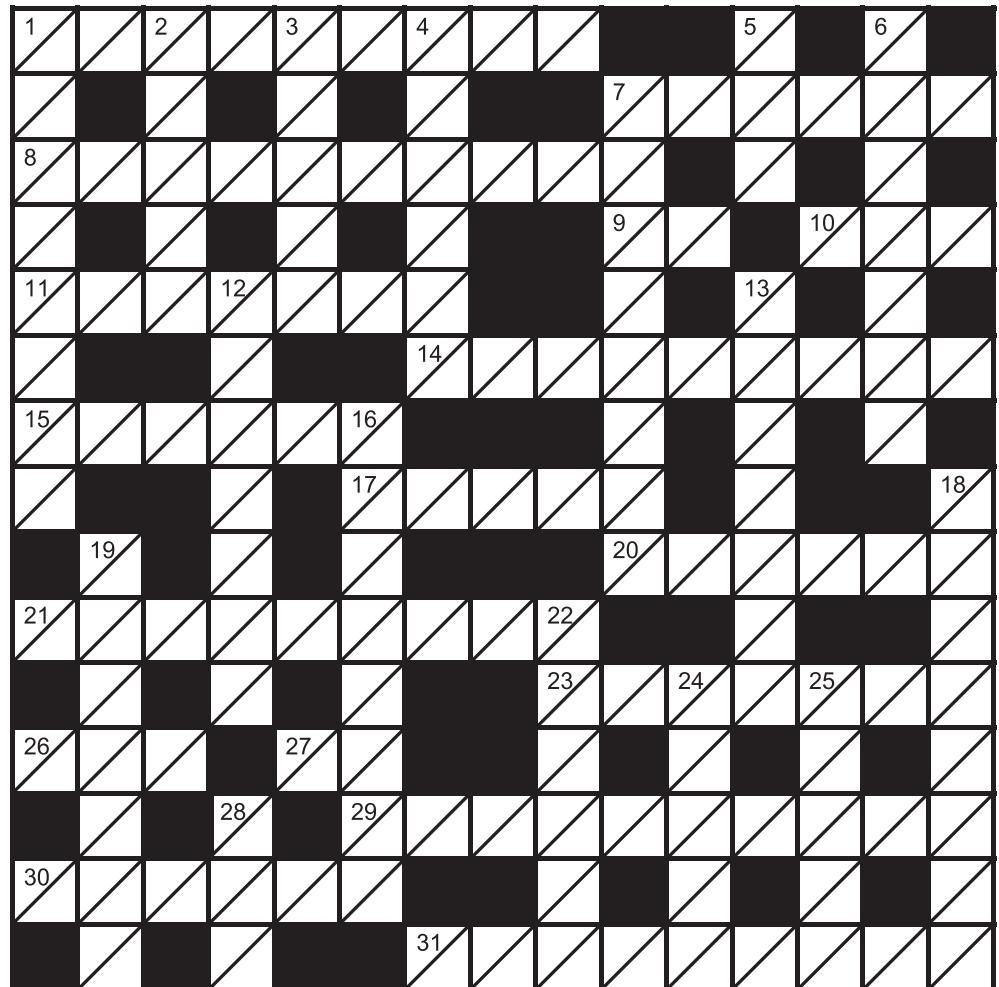
LAST WEEK'S gridSOLUTION

	2	5	7		2	1	8	7				
7	7	3	2		7	5	3	5	6			
2	8		2	5	1	9	3	4	6	1		
6	6	6		6	8	1		9	0	3		
1	7	2	9		2	0	1	2		3		
1	5	1	9	8	8	8	4	5	6	7		
6		1	9	9	1		2	0	1	5		
2	1	7		1	8	9		8	2	1		
7	0	3	5	4	2	3	1		7	4		
	1	6	4	4	8		2	4	7	7		
	1	9	8	4		8	2	3				

THIS WEEK'S CRYPTIC gridSOLUTION

```
C A T A T O N I C     Y   N
A   I   A   O   U T O P I A
F E L I C I T O U S   N   P
E   H   I   I     R Z   L
I   I     E Y E P I E C E S
N A I A D S   E       P   S
E   R   U T T E R   H   R
S   I   M     S C Y T H E
C H E C K M A T E   R   A
I M P   I N     R C V   E
A   I   E X H I B I T I O N
I N A N E R     E   O   E T
S   N   A R S O N I S T S
```
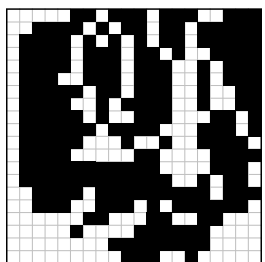
THIS WEEK'S QUICK gridSOLUTION

```
A M E T H Y S T S   W   L
N   D   U   V   A V A T A R
A L I G N M E N T S   R   U
T   C   C   L   P A   O R B
H A T C H E T   I   B   E
E   O     E T E R N A L L Y
M Y T H I C   A   S   S
A   O   Y A C H T   T   O
L   R   N     E X I L E D
F O R T N I G H T   O   Y
T   S   C   H E I N O U S
U X   P I     R   S   P S
S   V   S C H O O L M A T E
T E D I U M     N   E L   Y
S   M   T R E A T I S E S
```
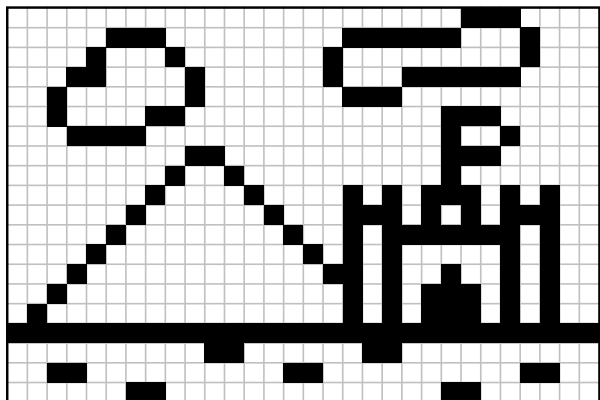
LAST WEEK'S haltingSOLUTION

THIS WEEK'S haltingSOLUTION

THIS WEEK'S haltingPROBLEM

	1 1 10	6 8 8	8 6	5 3		2 4 2	3 2 1	2 5 4	2 1 3		3 9 7		2 4 10	1 4 2	4 5 1	5 6 1	1 2 4 1	1 3 3 1	10		2	4	15	15	12	0

Row clues:
- 1 3
- 8
- 6 1
- 2 2 2
- 6 1 3 3
- 3 9 4
- 2 1 12
- 3 11
- 4 2 4
- 4 1 1 5
- 1 3 4 6
- 1 2 3 1 5
- 2 1 4 1 4
- 2 1 3 2 5
- 3 1 3 3 3
- 3 1 3 3 4
- 4 1 2 3 4
- 5 2 1 1 1 4
- 5 2 2 1 4
- 3 3 3 2

lookAHEAD

SUN APR 16	MON APR 17	TUE APR 18	WED APR 19	THU APR 20	FRI APR 21	SAT APR 22
Easter Sunday (Christianity)	You Wish It Were math**NEWS** Production Night But It Isn't Day International Sculpture Day		Bicycle Day	4/20 (Blaze it.)		Earth Day The math**NEWS** End-of-Term Event

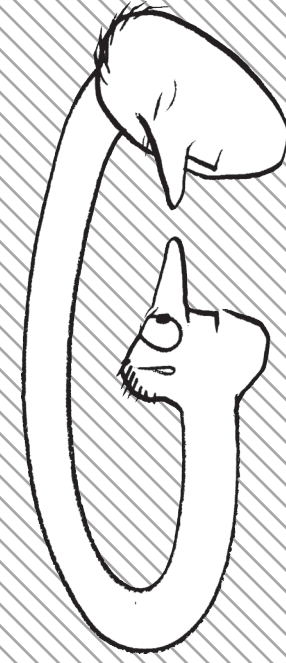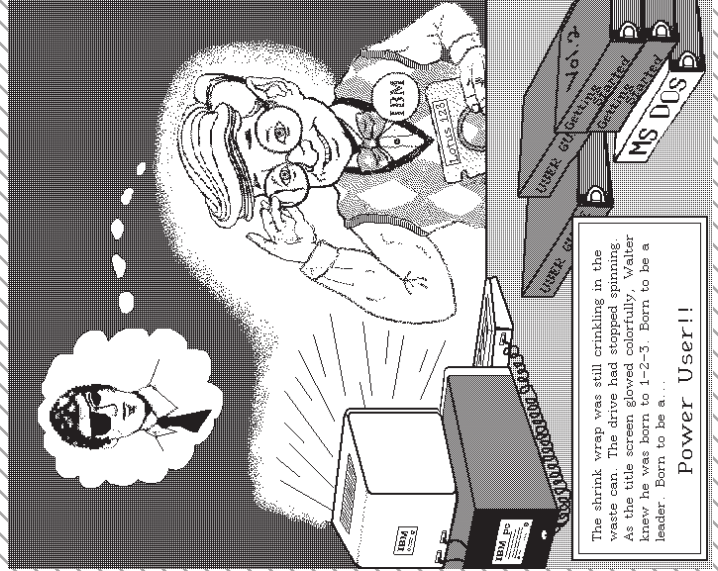| SUN APR 23	MON APR 24	TUE APR 25	WED APR 26	THU APR 27	FRI APR 28	SAT APR 29
St. George's Day (Christianity) Canada Book Day		Last Day of Final Exams The Editors Will Still Accept Gifts of Food If They're In The Office, Otherwise School Credit Is Fine Day	Hug A Friend Day		There Is No math**NEWS** 133.8, But We Can Dream Day	

GOOD LUCK ON FINALS!

The shrink wrap was still crinkling in the waste can. The drive had stopped spinning. As the title screen glowed colorfully, Walter knew he was born to 1-2-3. Born to be a leader. Born to be a...

Power User!!