



mastHEAD

WE FINALLY GOT THE FONTS AND IT FEELS SO GOOOOOND

Don't panic: everything's going to be just fine. Better than fine, actually, because we at **mathNEWS** have finally been able to launch the new format. Yes, that's right: for the first time in literal *decades*, **mathNEWS** has substantially **changed**, and all it took was a few months of InDesign work; some bureaucratic gymnastics between us, the bank, and the Dean's Office; a publication delay; and **seven thousand dollars**. Yeah. You read that right. *We spent seven thousand dollars on new typefaces for mathNEWS*, and it was one hell of a task to make the purchase. I might write about it someday. It's a story filled with black-magic bureaucracy, quests all over campus, consulting the elders of the faculty and the paper, and more! At least, those are the metaphors that I'll be using, since I don't think I'm allowed to discuss the actual events in their real-world terms.



Anyways, aside from the new format, this issue of **mathNEWS** has a bunch of great stuff for you guys. On top of another phenomenal set of student-written articles, this week marks the introduction of **mathASKS**, the first of our two new companion features! Each issue we'll be asking one of the Math Faculty's professors a series of questions posed by our writers¹, and print their responses; its companion feature (whose name is a secret to everybody) will be making its debut next issue.

Before I sign off, I just wanna make one special shout out to my high school computer science, media arts, and unofficial² yearbook teacher. Before his retirement, Mr. MacAskill's teams won awards year after year for their work on my high school's yearbook, but more importantly, he helped solidify both programming and the digital arts as true passions of mine, and it's that passion that I've put in to making **mathNEWS** the best student newspaper it could possibly be. So thanks for everything, Mr. Mac, and sorry again about building that virus for the lab computers that one time. I hope this will convince you to forgive the damages makes you proud.

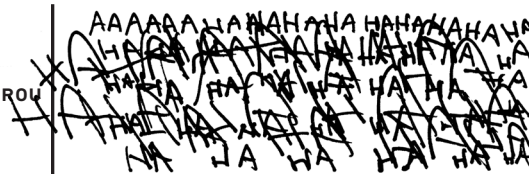
GEORGE LAMBROU
EDITOR, **mathNEWS**

1. Or anyone, really. Feel free to send your questions to mathNEWS@gmail.com. Remember to start the subject line with "mathASKS"!
2. I sat in on the latter half of his year-long yearbook class during my spare period back in high school, since my calculus class conflicted with the first half; Mr. MacAskill was kind enough to host me for the entire semester.

THIS WEEK'S QUESTION: "WHAT WOULD YOU SPEND EXACTLY 7000\$ OF **mathNEWS**' MONEY ON?"

HATOFCHOCOLATE	Term 5A.
GBAD	One year of Masters in Netherlands.
DIMINUTIVEREX	I'd bribe my way into Sean Spencer's press conferences.
FORMERED	A new fucking main computer!
PARU-PARO	28,000 gumballs.
L3	Extra-large pizzas instead of just large ones.
BEYOND META	Infrastructure spending for webbing issues and better distribution. [Ed: We agree.]
SHAY BLAIR	700 10\$ escorts.
VICE MITT	1400 cheap blowjobs.
THE JOKER	New joke books.
DIANE	Office plants. [Ed: If anyone knows any good florists in the KW area, drop us a line?]
NOTAVEGAN	Buy \$7000 worth of the delicious soy samosas that they sell at the C&D. (They're vegan, did you know?)
A CRAFTY PLAYER	I'd purchase 933 1/3 subscriptions to mathNEWS .
THE CASH-ONLY SIGN IN MATHSOC	Marketing for raising awareness of the fact that MATHSOC is cash-only in full-page, full-colour mathNEWS spreads.
 	
KUBLAI KHAN	A new mathNEWS mascot (and it's corresponding costume)!
ZETHAR	An aqrabuamelu. I've got some contacts that can make it happen. 😊
THE EUROBEAT-'EM-UP	My Amazon shopping card, full of CDs I want to order from Japan, but can't afford. After shipping, that is.
SCYTHE MARSHALL	Spend \$100 on a new external hard drive, and put the rest towards "Editors" for the file name on the Ocarina of Time livestream.
SOVIET CANADIAN	A BDRM-2, all-terrain, NBC-protected, Armoured Reconnaissance Vehicle.
WALDO@<3.LE-GASP.CA	mathNEWS merchandise, and publishing an anthology of all the great things about mathNEWS (e.g. profQUOTES , etc.). Who knows, maybe we'll publish something for the 50 th Anniversary of the Math Faculty. 😊
VICEROY BUTTERFLY	Humour-enhancing drugs.
BLOSSOM	A new MATHSOC computer.
INSPIRON	A stupidly overpowered computer for mathNEWS .
MURÀD ALIZADÀ	Fonts. Russian fonts. Cyrillic script. You... never know when you need those. [Ed: Our new fonts do contain Cyrillic characters, actually...]
e	Getting mathNEWS banned from the White House. [Ed: Please no, they need as much Erudite Thought™ as they can get right now.]
UOITFTW	Myself
DANK	Build a mathNEWS building on campus.
TOBEDETERMINED	Snacks for the office. The best snacks.
EXTROVERTED	A new Mac for the office.

GEORGE LAMBROU



Your W17 **mathNEWS** Editors

GEORGE LAMBROU
ANGELA LE
HEATHER STONEHOUSE
MICHELLE ZHU

WELCOME TO THE NEW mathNEWS!

OR WHY I DESERVE A MEDAL, BUT WILL SETTLE FOR SCHOOL CREDIT: A LETTER FROM AN EDITOR

Holy hell, it's finally done. After a ton of work, a few formidable bureaucratic obstacles, and a delay, we've finally managed to launch the new **mathNEWS**. I've already written an introduction for it in the **mastHEAD**, so I won't waste time with another here. Let's dive in to what's new, and what's changed!

TYPOGRAPHY & LAYOUT

First and foremost, the most obvious thing we've changed is **mathNEWS'** typography and layout, which has otherwise remained mostly the same for over 25 years¹. In doing so, we've significantly overhauled the way we handle and flow text: everything you see now aligns to a set of common baselines to give the paper a more refined and polished look, and articles now flow from top-to-bottom, left-to-right across columns for a more consistent reading experience. We've also done away with the old fully-justified paragraphs, opting instead for left-justified, ragged-right ones, and we've increased the amount of vertical space between lines, paragraphs, and titles to give the text some more breathing room, all to improve readability. Lastly, we've purchased some new, professional-grade typefaces to tie all of this together, and give **mathNEWS** a cleaner and more modern look.

We've also expanded our publishing capabilities a bit: we can now print articles in almost any Latin-based script (e.g. French, Spanish, Turkish, Czech, etc.), Greek, Cyrillic, Japanese, Emoji, and even Cuneiform², which means our writers (e.g. you) can submit more kinds of content to **mathNEWS** than ever before. 🍷 Of course, whether or not it can actually be published will depend on the editing staff of the term — we can't go ahead and print articles that we can't read, after all, so always check with the Editors before penning some haikus in Hiragana (though given the incredible diversity of our faculty, I don't think this'll be too much of an issue for future teams of **mathNEWS** Editors). Regardless, along with the new layout, it's now going to be ridiculously easy for **mathNEWS** Editors both present and future to publish your writing, and make it look good too.

NEW & UPDATED FEATURES

Naturally, there's more to the new **mathNEWS** than what meets the eye, and so this issue also marks the debut of one of our two new featured columns, which will be written by professors from around the Math Faculty. This first is **mathASKS**, an AMA-style column where professors ask a series of questions posed by our student body. The other is a full column for professors to write about whatever they want, and will be coming out next issue with not one, but two full columns!

When we approached Prof. Furino to help us kickstart the new column, he suggested that his entry take on a Q&A/AMA format: we would collect a list of student-asked questions, and he would answer as many as he could. After some discussion, and some of the questions he received, he thought it would be appropriate for him to write a full article as well, and thus,

the **Powerpuff Girls mathASKS** was born! Every Production Night, we'll be asking one of our school's professors a series of questions submitted by you guys, and printing the answers in that week's issue of **mathNEWS**. We think it's going to make for some really interesting exchanges between students and faculty, so send your questions to mathNEWS@gmail.ca (with "**mathASKS**" in the subject line) and ask away!

Some existing **mathNEWS** features have also received some much-needed attention. For instance, the answers to the **mastHEAD**, as I'm sure you've already noticed, are now tabulated, to make them easier to read, and to make who answered what more obvious. We've also turned the **lookAHEAD** into a tear-off calendar and moved it to the back of the paper, along with any **otherNEWS** (formerly the "Sezses") for that two-week period. Now, instead of just ignoring the thing searching for your copy of **mathNEWS** to see upcoming events, you can just rip off the back page of each issue, and use it as a two-week calendar! And we've made sure that nothing too important will go on the reverse, so you won't be missing out on any articles by keeping it on your wall or bulletin board.

THE DELAY

Unfortunately, all of this did end up having a noticeable impact on our production cycle. While working with the Dean's Office to make the font purchase, we uncovered some anomalies regarding **mathNEWS'** position within the university that threatened its ability to, well, actually exist in the future, and I felt that we needed to ensure the continued existence of the paper before we did anything else. Rest assured, we're already in the process of sorting this out (so don't worry, the paper is safe), but between that, midterms, not having the fonts, and some other surprises last week, I thought it would be best to delay the issue until everything had settled, and we could produce the best paper possible — without compromising on its quality. This has also given us time to tweak the new format and squash any bugs before the summer team of Editors takes over; we now have a whole extra production cycle to make sure that our hard work will stand the test of time.

Ultimately, we know we're already asking a lot in changing the **mathNEWS** you know and love so significantly, and so I didn't want to abuse your trust in us by releasing a half-assed version of the new format for the sake of hitting a deadline. Don't worry, though, we'll be back on schedule next issue, new format and all. **mathNEWS** has always been an end-of-the-week tradition around here after all, and that's one thing that definitely shouldn't change.

AS ERUDITE AS EVER

Of course, don't let the new look fool you: this is still the same **mathNEWS** you know and love, just sporting a new shirt and a haircut. We're still by the students, for the students, and we'll still be giving out free pizza to anyone who writes for us, every other Monday. While it'll take some getting used to, I hope

you guys like what we've done. Again, we've put a lot of work into this, and we're enormously proud of what we've accomplished. We hope you enjoy it!

GEORGE LAMBROU
EDITOR OF mathNEWS

1. Not counting last year's landscape fiasco, which was also my doing, and which I'd sincerely like to apologize for. About a year ago, during my Editor training, I had intended for the landscape layout to serve as a prototype of this format, tweaking it before publication, but due to some unexpected time constraints, I threw it together together in the space of two hours for the April Fool's Day issue, and it ended up being used for a few issues afterward. In retrospect, it was an incomplete mess, and never should have seen the light of day in the form that it did, and for that, I apologize.
2. Which, believe it or not, we've actually been threatened with **asked about** a few times; Zethar, we're expecting great things from you.
3. Professor Steve Furino is (as of this writing) the Math Faculty's Associate Dean of Undergraduate Studies, the developer of Math 135, and a big fan of **mathNEWS**.

MY HOPES FOR FULL LATEX SUPPORT HAVE FINALLY BEEN CRUSHED

As you might have heard from my paranoid rant prominently displayed on page 3 of last issue, I had written an article that was supposed to beautifully showcase the full LaTeX support that the **mathNEWS** Editors were planning to obtain by the time that issue was printed.

But recently, I was heartbroken to learn that this dream was not only delayed by two weeks, but permanently crushed: LaTeX, the editors told me, was only necessary for the few mathematical formulas that get published, so they apparently don't think it's worthwhile to painfully add full inline LaTeX support so that I can make fun of them for doing that! Who would have thought that?

At least I can express my feelings in Emojis now: 😭😭😭😭😭

DANK

We don't care about qualifications — apply to be mathNEWS Editor today!

A mathNEWS EDITOR WHO'S ALREADY DESPERATE TO RETIRE



N WAYS TO MISS YOUR profQUOTES QUOTA FOR THE ISSUE

- Don't bring anything to class with which you can write down **profQUOTE**-worthy remarks.
- Don't pay attention in class.
- Go to sleep in class.
- Get so engrossed in the lecture that you forget about taking down **profQUOTE**-worthy remarks.
- Write so slowly that you forget what the quote was halfway through.
- Get stuck with a prof who doesn't make very many **profQUOTE**-worthy remarks.
- Don't go to class.
- Don't go to class because you have to finish homework for that class.

Incidentally, it was the last one for me this issue.

BuhrQUOTER

A FAREWELL TO THE PINK TIE STICKER

THE END OF AN ERA COMES IN THE NAME OF ACADEMIC INTEGRITY...

As of February 16, 2017, the Math Undergrad Office has handed out the last of the pink tie stickers to those students who had brought in their calculators for approval. Unfortunately for the students who missed out on this opportunity, there will never again be a new stock of pink tie stickers to approve one's calculator. That means, if you have a calculator that can be approved, you currently have no method to get it approved.

WHY IS THIS HAPPENING? WHY NOW?

Back in June of 2015, the Math Faculty announced a major change to the calculator policy: the only calculator that would be permitted would be the TI-30XIIS/B and all permitted calculators (i.e. those that currently sporting a pink tie or its equivalent) currently floating around would be rendered useless beginning in Fall of 2015. The main reason for this change was to streamline the policy, allow for fewer opportunities to violate academic integrity, and make it easier to proctor exams and catch perpetrators. In addition to this, the pink tie sticker was intended to be phased out completely and only models that had an embossed pink tie (or equivalent) would be permitted for use in exams. Many who were caught violating academic integrity in the past had acquired a sticker, placed it on similar looking, yet unapproved calculator models that had higher functionality/power (i.e. programming capabilities, integration functionality, etc.), and made use of said unapproved calculators on exams. While the Faculty places a high priority on academic integrity, it unfortunately neglected to consult students prior to making these policy changes.

The Spring 2015 MATHSOC Student Council and the Executives at the time went all the way to the Associate Dean's Office with many students' concerns and fought to have the policy modified. Their efforts at the time gave us the current policy we see today with the Math Faculty permitted not only just the TI-30XIIS/B model, but also the Casio fx-300MS and the SHARP EL-531X/XG/XH models. The agreement at the time however also meant that the pink tie sticker was still poised to be phased out as the three newly approved models would be sold on campus (as well as distributed in the first-year Orientation kits) with an embossed pink tie, or equivalent. Any remaining stickers would be distributed as needed for students who did not have them on their calculators yet, and no more would be acquired as such. The Math Undergrad Office dutifully distributed its remaining back stock of stickers, always with the caveat that they may run out. Almost 5 full terms later, that has now happened.

WHAT DO I DO NOW? I NEED A PINK TIE STICKER!!!!

As it stands right now, if you need a new Math Faculty approved calculator, you are only able to purchase one on campus at MATHSOC (MC 3038), Campus Tech (SLC Basement), WriteStuff (SCH), or Media Doc (STC). Depending on the model of calculator desired, students may need to spend as little as \$17 to as much as \$36 for an embossed version. Of the outlets mentioned, arguably the cheapest one to purchase a

Math Faculty approved calculator is MATHSOC itself. They sell the **TI-30XIIS for \$17** (and are **now back in stock!**), the **Casio fx-300MS for \$20**, and the **SHARP EL-531XG for \$23** with all pricing being cash only, with taxes included. The absolute cheapest method for acquiring an approved calculator by far, however, is finding a friend who can let you borrow theirs. While MATHSOC itself also has pink-tie calculators available for borrowing, it is important to note that they do not currently loan them out for exams.

THAT'S GREAT AND ALL, BUT WHAT'S BEING DONE TO FILL THE GAP FOR STUDENTS WHO HAVE ALREADY SPENT MONEY ON CALCULATORS THAT NEED TO NOW BE EMBOSSED?!

MATHSOC Directors, Student Council and the Executive are currently looking into ways to fill the gap to make sure students spend as little money as possible on getting the materials they need. Proposals have included offering a calculator exchange program where students would pay a nominal fee (i.e. under \$5) to have their calculator embossed with MATHSOC itself so long as it's an approvable model. That said, it may very well take until next term to have such a new system in place after consultation with all affected parties. If any of **mathNEWS** readers have further concerns about the demise of the pink tie sticker or suggestions to fill in the gap that was created, feel free to message MATHSOC's current Vice President of Academics, Anna Chen, at vpa@MATHSOC.uwaterloo.ca.

If you are ever concerned about the calculator requirements for your classes, however, please don't hesitate to contact your instructors for clarification (some are more strict about the policy than others).

A MEDIUM KITTY



A PRACTICAL GUIDE FOR DEALING WITH THE UNIVERSITY OF WATERLOO'S GEESE¹

March is just around the corner, and just following on its heels is spring. While most would appreciate the change from the sub-zero temperatures, biting winds, and heaping piles of snow lying about, spring is not without its own dangers. For bedraggled university students everywhere, spring is the time of procrastinating on papers, desperately cramming for midterms and finals, and the struggle to summon some last well motivation from somewhere (deep) inside themselves. However, for students at the University of Waterloo, spring ushers in another hazard to limb and sanity: Nesting Season.

For those unfamiliar with Nesting Season, possibly because they come from places where the wildlife doesn't marauder around and try to murder you when all you wanted to do was to get to classes on time and not fail out of university, thus bringing dishonour upon your house, your ancestors, your sheep, your cattle, your pets, and/or anyone else with some sort of association to you, survivors who have intimately experienced this traumatic event envy your doe-eyed innocence, as said eyes have yet to be scarred by the knowledge of what 6.5 kilograms of rampaging waterfowl can do.

But as winter cycles to spring, so must the blissful months of freedom from avian attack eventually give way to the perils of nesting season. Simply put, nesting season is a time when the living personification of wrath takes wing and swarms campus for the purpose of propagating themselves across the land. No one is safe, and for long-suffering students, each day quickly devolves into a constant struggle to move from class to class without being set upon by geese for the crime of existing in their vicinity.

So, while everyone metaphorically battens down the hatches in preparation for a long season ahead, here are some tips to getting through nesting season with a minimal amount of maiming.

1. DRESS UP AS A GIANT EGG.

Geese are not terribly bright, so they will be fooled by your disguise and accept you as one of their own, thus allowing you to get across campus unmolested (by the geese, at least. Can't make guarantees about anything else). The downside is that you have to spend your time pretending to be evil incarnate, which can have lasting effects. For this reason, this is not recommended for individuals above a baseline level of evil and those who are susceptible to mental suggestion.

2. BRANDISH A ROAST GOOSE TO SHOW THEM WHO'S BOSS AND WARD THEM OFF.

It is important that this goose be personally prepared; I like to use the following recipe. The vengeful waterfowl will see that you have slain one of their brethren and know to be wary of you; they will keep their distance, but wherever you go you will feel the specter of baleful eyes on you, always watching.

Exercise caution when walking about at night and near nests. Tempting as it might be, do not eat the roast goose until safely away from campus. They watch, and they remember.

3. CHARTER A HELICOPTER TO TAKE YOU AROUND CAMPUS.

This is only advisable if you are filthy stinking rich with more money than sense, but given that this is a prestigious university it can't be that hard to find someone who fits this criterion. The more entrepreneurial minded might branch out to offering rides to others, while some of the more thrill-seeking engineers could cobble something together by modifying a drone. The aerial view of the university is probably pretty nice, and one could gather intelligence regarding the movement of the geese.

4. BOW DOWN TO YOUR NEW GOOSE OVERLORDS.

Maybe the geese are just misunderstood? Think about it, it is really worth all this effort to go to class? For the low price of never stepping foot on campus again, your most recent goose encounter could be the last in your life! I mean, it's not like students regularly go to class anyways.

5. DECLARE WAR ON THE GEESE.

While this idea appears a tad outlandish, it is not without precedent. While the Australians were ultimately unsuccessful in their fight against the emus, Waterloo has 35,900 students enrolled in its campuses. Surely, if they work together, they will have more success against the forces of evil than a bunch of Australian farmers?

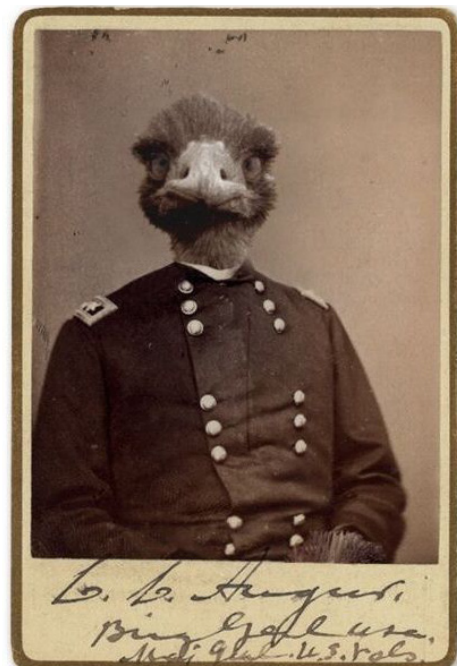


FIGURE 1. A General of the emu side.

6. DROP OUT OF SCHOOL.

No school = no geese, enough said.

7. STRATEGICALLY SACRIFICE YOURSELF SO THAT YOUR FRIENDS CAN GET TO CLASS.

Pros:

- You'll be lauded as a hero among your circle of friends.
- Your friends can get to class.
- You won't have to deal with interviews, midterms, finals, or that crushing realization that you're unemployable and forever alone since you'll be dead.

Cons:

- Death by geese.
- Maybe you don't have friends?
- You'll still owe tuition, probably

8. MAINTAIN EYE CONTACT TO ASSERT DOMINANCE.

Get up close and personal. Stare intently at the geese. Bare your soul to the geese. Attain an understanding with the geese. Imagine a future with the geese. Become one with the geese.

9. CHALLENGE THE GEESE TO A DANCE-OFF.

They will be honour-bound to accept your challenge, so while they are trying to figure out how to dance with their stubby webbed feet you can make a run for it. Alternatively, win your dance-off so decisively that no goose dares to show their face to you ever again. Should you lose, though, there will be a steep price to pay...

10. ARM YOURSELF WITH A CHAINSAW.



FIGURE 2. A goose, aka the spawn of Satan. (Oh, god — why does its tongue look like that?)

It naturally confers a +2 defense bonus on yourself and a -3 debuff to the geese since they don't like loud noises. Though this may be a hard item to procure and might possibly get you arrested if used on campus, at least you will be safe from

the geese. Geese also have a hard time getting into police stations, so there is really no downside here apart from the fact that you'll get arrested. You might have a bit of a hard time explaining this to people out of province/country, but any UWaterloo alumni will understand.

Eventually, the season will end, producing a new crop of hardened warriors ready for whatever challenges might lie ahead. After all, once you've grown used to fending off constant attacks from the monsters depicted in Figure 2 on a daily basis, what's a final here and there? But for those of us currently just trying to get through the term without tanking our grades, may the curve be ever in our favour.

**SIGNING OFF,
CESIUM**

1. As written by someone who has never been to Waterloo before, so please take all advice with a grain² of salt.
2. Or maybe a whole bucketful of salt.

N COMMENTS ON THE DEATH OF THE PINK TIE STICKER

As you may have heard by now (see Office Sez and A Farewell to the Pink Tie Sticker...), the Math Undergrad Office has recently run out of pink tie stickers, and will no longer authorise new calculators purchased at off-campus locations. As someone who often frequents the MATHSOC office, I have heard¹ endless comments and complaints about this, and would like to share some of those here:

- When are new stickers coming in?
- Can I use this calculator without a sticker?
- I just came in here for the candy.
- I thought they ran out of stickers last year.
- R.I.P. pink tie stickers 16-02-2017
- Why is there no candy?
- Can you give me a sticker anyways?
- Can I pay for that with credit card?
- I don't care about the stickers, but is there more candy?
- How am I supposed to run my pink tie sticker black market now?
- The pink tie embossment is ugly and not pink enough; and the idiot who designed the new logo should hurry up and submit that for use instead. [Ed: I need to stop making sarcastic comments around the MATHSOC Office...]

A CRAFTY PLAYER

1. Or I may have just imagined them due to sleep deprivation...

IS THE ~~WORLD~~ U.S. IN A TAILSPIN?

TL;DR: YEAH, PROBABLY.

If you haven't read the news lately: good news, you haven't missed much. I have, and I'm oscillating between feeling depressed about the utter absurdity (stupidity) of pretty much all of the news out of the U.S., and feeling encouraged because normal people are standing up instead of politics being something you only think about during election season.

So! We could be watching the slow implosion of the Trump presidency, documented by seemingly hourly scandals:

- The U.S. press secretary confiscated aides' phones to search for evidence of leaks.
- An Indian man was shot and killed in an apparent racially motivated attack; Trump doesn't issue a statement condemning it.
- Newsflash: health care is insanely complicated, so ObamaCare reform isn't easy. Compared to it, the budget is just "a tiny little ant".
- The travel ban was struck down in the courts, but don't worry, Trump will sign a new one which will "have the same basic policy outcome" on Wednesday.

On the flip side, maybe this isn't an implosion at all — the majority of the US Congress (the ones with the actual power to impeach Trump) seem to be perfectly happy with the status quo. Some of their constituents aren't, but hey! Turns out Senators can just cancel Town Halls. But back to Trump, because some of this stuff is so absurd it's funny:

- He used "military" as an adjective, apparently intending it to mean "non-military", according to the White House.
- To generate the predictions for the new budget, his team "ordered staffers to predict sustained economic growth of 3 to 3.5 percent", and "backfill all the other numbers in their models to produce these growth rates".

I'm hopeful 2018 will bring interesting things — with the governors' races and House of Representatives elections, it's going to be another period of political activity. In the meantime, I'm hoping tensions cool down. And that the next immigration order is struck down as well; I already accepted a job offer for summer.

HAT OF CHOCOLATE

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

A TIRED mathNEWS EDITOR

HAVE NO FEAR, THE JOKER'S JOKES ARE HERE!

NO, I LIE, READ AT YOUR OWN RISK.

Hello, special readers! You are in a special edition of **mathNEWS** that includes special jokes from this special author... THE JOKER! Get ready for some terrible puns! *writes "puns" on paper and tears paper* Get it?? Because they're tear-able (terrible)...

Here's a ice breaker for you, if you're still reading:

How much does a polar bear weigh? Enough to break the ice!

Yes, I use this a lot — and it works! I'm sharing it now for all those awkward people who have FANTASTIC humour like me. Trust me, I'm not lying. In fact, I am sitting as I write this. Here's a general tip for newbie jokers: **DON'T BELIEVE ANYONE WHO SAYS YOUR JOKES AREN'T FUNNY!**

Now, for some more fantastic jokes [Ed: **THESE ARE ALL RIDICULOUS PUNS. YOU HAVE BEEN WARNED.**]:

- You know I used to be addicted to soap? Don't worry, I'm **clean** now.
- Why is hot faster than cold? Because **you can catch a cold!**
- What kind of computer does a scientist use? A **laptop!** (Laptop!)
- What do you give a sick bird? **Tweetment!** (Treatment!)
- Why did the bachelor buy a calendar? He wanted a lot of **dates!**
- What flower does everyone have? **Two-lips!** (tulips!)
- What did salad say it when it was stuck in the refrigerator? **Lettuce** out! (Let us out!)
- Who goes best with New Year's Eve? New Year's **Adam!**
- Why are bones so heavy? Because they weigh a **skel-etonne!**

The last joke is a shout out to my home boi Guzma from Team Skull! ☹️☹️☹️

And you know what? These strings of puns are all totally **ir-relephant**.

Well, this has been fun. I might come back and write again (if they allow me [You overestimate our standards. -ED]). If the **mathNEWS** people actually publish this, and you finished reading, then, wow...

Just know I am moved that you read through all the way. *physically moves*

THEJOKER

REGISTER YOUR DISCONTENT

Applying to Graduate Schools is not a simple process by any means. However, coming from Canada complicates this process further, and the University of Waterloo takes the cake. European Universities would appear to have an agreement among them that allows students to easily transfer their transcripts and copies of their degrees between universities, allowing these students to retain their hair, sanity, and will to live. Universities in all countries but Cameroon, Canada, Eritrea, Ethiopia, Ghana, Nigeria, or the USA can simply submit copies of their documents to the online application portals. Canada and the United States, however, aren't allowed to play with the big kids in Europe or 95% of the world. These 7 are the only countries in the world where students are required to have their university's registrar's office send their documentation.

Now, were this as simple as an email, or even a fax, this would be a simple process, one which would be easily tracked, easily verified, and fast. Of course, that isn't the case. Nope, Canadian students need to request that their registrar send a physical copy of their documentation to the institution to which they are applying.

The University of Waterloo offers students two options for sending documentation: regular mail, or courier (and fax, technically, but no one accepts that option so it may as well be retired). I doubt that you'd be surprised to learn that this none of this is free: you have to pay for all of your documentation — and the courier service.

Being one to hedge my bets, I had applied to 7 masters programs, through 4 portals (meaning I only needed to send my documents to 4 destinations). I organized everything as well as possible, I showed up with all 8 forms and my credit card. I was sending my documents nearly 2 months before they were due, because that meant I could use regular mail instead of having to shell out 30\$ extra for the courier service. I was ready, and everything went to plan. They took my papers, told me it would take 3-5 business days to "process" my request, and then they took my money. Problem solved. Right?

Not really. The due dates were starting to creep closer and I wasn't seeing any confirmation of my documents having arrived in any of the portals I was using. I started sending messages. 1 portal didn't respond at all, 2 responded in the affirmative, they had received my documentation no problem. It was the last portal that nearly gave me an aneurism. Their response:

"We don't have anything from you, but I can check again. Can you describe your documents?"

I thought this was a little weird, but I gamely described the Waterloo crest through their email form (which didn't allow for attachments) — "The documents should be in an envelope with the University of Waterloo crest; a yellow shield, with a

white chevron, outlined in black in the middle. On top of the chevron are two lions rampant, and there is one below." I figured the more detailed I could be the better.

"OH! We have your document. We didn't associate it with your account because we couldn't read the name on the envelope."

Here comes the kicker. With creeping dread, I asked them to double check that within the envelope were both my transcripts and a copy of my degree.

"Your package did not contain your transcripts."

At this point I had about 1.5 weeks until the deadline for submitting my documentation. So, I stormed my way over to the registrar to buy a copy of my transcripts and have them sent by courier. They did manage to get there in time, but at this point I had spent more money extracting my documentation from the clammy hands of Waterloo than I had spent on any of my application fees.

The moral of the story: always keep an active eye on the applications that you send in to anything that requires documentation from Waterloo.

GBAD

MARCH MADNESS: A THEATRICAL EVENT

This week Kitchener Waterloo Little Theatre (KWLT) is putting on March Madness what is probably be the greatest theatre event ever. 4 teams are given the exact same script and have one week to put on a play using that script. The twist is that the script is incredibly open to interpretation.

Auditions for it are happening this Saturday, March 4th. You can show up at KWLT 9 Princess Street anytime from noon to 4PM.

Show are happening the next Saturday, with two performances at 2PM and 8PM. Tickets do sell out fast.

This event is amazing and I encourage people to participate. I literally spend most of the year looking forward to it.

BEYOND META



A M EDITOR

ONE WAY TO KILL A CAR BATTERY

RECENTLY, MY CAR'S BATTERY DIED. HERE'S HOW IT HAPPENED, HOW I FOUND OUT, AND THE AFTERMATH.

WEDNESDAY, FEBRUARY 22, 20:00:

I'd recently arrived home from a long day on campus; work all day, run a Bingo event in the evening, come home hungry. Phone's dead, so I set it to charge, and went to make dinner: pasta with some sort of tomato sauce with sausage and vegetables. Eating dinner, I managed to drop some of my food onto the floor. Which is, um, beige carpet. Whoops.

I went to clean it up, but because my lighting isn't very good in my eating area, I needed to get some sort of extra light source to illuminate exactly where the spill occurred. Flashlight? Battery's dead. Phone? Can't find my phone; where'd my phone go? Well, I drove home, and the pocket in my backpack where my phone usually is happens to be open, soooo it must've fallen out of my backpack, in my car.

It wasn't in my car. I checked! Even used the car's cabin light, since, y'know, I don't have a working flashlight. I did this twice, since I forgot to check one place the first time.

Well, eventually, I gave up on my phone ("It must be on campus. Oh well."), and went about cleaning up the spill. Eventually did a good job on it, too. Carpet looks pretty good, now. It's 21:30, at this point. So much for tonight.

... Turned out my phone was in my room. Right. Okay, well, whatever. Things are good now, I guess.

FRIDAY, FEBRUARY 24, 08:40:

My thought process: "I have a meeting on campus at 09:00, I have lots of work to do, and I have a ball hockey game at 19:00. Do I want to drive? Well, I don't want to walk or bus with all of this junk, so yeah, let's drive."

I lugged my junk downstairs, threw it into my car, hopped into the driver's seat, and turned the key in the ignition (yeah yeah, it's a 1990 Toyota Camry, no push-button starts for me).

Nothing.

At that moment, I understood. I looked up and to my right: there was the car light switch, set in the "On" position, draining the battery of the car, since Wednesday evening.

Yeah, that would happen, wouldn't it.

AFTERMATH:

I grabbed my stuff and thankfully caught a bus. I made it to the building where my meeting was to take place at 09:05... and who's walking up the stairs to the same door but the person I was supposed to meet five minutes ago. We laugh! Neither of us were really late.

I had to lug all of my stuff home on the bus, too. Oh well. On Saturday, I had the battery jumped, and drove around for a while, unable to really understand this string of events. Conveniently, I was also able to pick up my chair mat on the same trip; this chair mat also has a story, which you will find in a subsequent issue of **mathNEWS**. Stay tuned!

SCYTHE MARSHALL

REALLY BIG FISH MATH

In Arabic mythology, Bahamut is a fish that supports the earth. It is said to be so large that "all the seas in the world, placed in one of the fish's nostrils, would be like a mustard seed laid in the desert".

Deserts are most reasonably measured in surface area, and the largest sandy desert on earth, the Sahara, is $1.4 \times 10^7 \text{km}^2$. Mustard seeds are at their widest at 2mm, so their surface covered is approximately 4mm^2 .

Wolfram Alpha says the volume of all the water on earth is $1.386 \times 10^9 \text{km}^3$. Thus, the approximate volume of the fish's nostril is:

$$\frac{1.4 \times 10^7 \text{km}^2}{4\text{mm}^2} \times 1.386 \times 10^9 \text{km}^3$$

Which works out to 4.851×10^{27} cubic kilometres. Wolfram Alpha informs us this is approximately the volume of Betelgeuse. Assuming the nostril is approximately spherical, the diameter is about 2 light hours.

The average sunfish is 1.8m long. I would estimate that the average sunfish's nostril is 4cm, based on cursory examination of a picture I found on google images. This ratio would bring the entire fish's length up to about three and a half light days.

This sounds like a lot, but it actually isn't. The Pillars of Creation, a real thing that we know actually existed, are about 4 light years long. That's about 400 times bigger than Bahamut. Our knowledge of the universe has expanded so much in the past few thousand years that a measure of size that was once beyond all comprehension is now, while still pretty damn big, just one of the many huge things that we know about.

**KEEP SWIMMING!
DIMINUTIVE REX**

**Get your unadulterated nonsense
printed by emailing it to us at
mathNEWS@gmail.com.**

REVIEWMENERA

Numenera is a table-top role playing game in the same vein as the ubiquitous Dungeons and Dragons. This isn't surprising, since its creator, Monte Cook, worked on earlier editions of D&D before founding his own company. However, it definitely has its own identity as a game, which is what I'm gonna try to show you.

THE PREMISE

"Sufficiently advanced technology is indistinguishable from magic". Arthur C Clarke's third law rings true in this game, where your characters, heroic or otherwise, navigate a fantastical world full of ancient technology called numenera that are so powerful and incomprehensible that they might as well be magic. Continent-sized machines churning beneath the waves, wooden stairways to alternate universes, and negotiations with sentient colonies of insects are all par for the course.

WHAT'S IT LIKE TO PLAY?

A session of Numenera will flow a lot like a D&D session (I'm comparing everything to D&D because if you've gotten this far in the article, you've probably played it). The GM will describe the situation, you'll say what you want to do, and the GM may ask for a roll to decide if you succeed.

The difference here is that you can decide to expend "effort" to make the roll more likely to succeed by sacrificing points from your Might, Speed or Intellect pools. But these pools are finite, and resting is one of the only ways to get them back, and they also double as your "health", which means that if you get harmed, you'll subtract from those same pools.

You'll also have a lot of interesting "cyphers", which are powerful one-time use items that do everything from explode your enemies to create instant shelters for you to sleep in for the night. The game gives you a lot of them, and penalizes you for carrying too many, so if you think it'll work, throw it!

Characters are also very interesting. There are only three "classes" to speak of, which you can basically read as "Fighter, Mage and Rogue", but you'll extend these so-called "types" into a descriptive sentence. So while two players may play Fighters, one could be a "Strong Fighter who Sails the Sea", and another could be a "Stealthy Fighter who Takes Aim", which are very different.

WHAT IS THE GAME ABOUT?

The definitive experience of Numenera is not stabbing a mutant with a spear or subsequently getting better at stabbing things with spears, although you can and will do both of those. But when you try to buy a device from a merchant who seems to be moving backwards in time, and then use that

device to grow mushrooms whose spores can electrocute an automaton that seems to be made of glass...you'll know that you're playing Numenera.

PARU-PARO

N HINTS FOR THE NEXT CO255 ASSIGNMENT

[Note to the editors: Those hints are intended to not actually help with the assignment. But I don't know the assignment, so they might be helpful by accident. If you think publishing some of them is a bad idea, just take them out.]

Last year, I took CO255. I enjoyed it a lot, but I didn't actually know the course would get so popular! Now, a lot of my friends are taking it, and it's quite amusing to watch them pair off with each other and struggle through the assignment.

I don't know your assignment itself, but Bill Cook likes to conceptually reuse assignment questions [There are only so many different conceptual types of questions you can ask for the same class, so we'll allow it -ED], and I vaguely remember some things from last year. So to help all my friends out, I have some hints for the current one:[1]

- Try to use Farkas' Lemma
- When you get things to be in linear form, try to use linear algebra on them!
- Inequalities are easy: You just take two things, and prove one of them is bigger!
- Farkas' Lemma!
- If you have a linear program, and you negate all the variables and flip the inequality sign, you get something that isn't the dual program, but maybe you can fool your friends into thinking it is!
- Farkas' Lemma!
- When your partner is getting lazy, compliment their slackness!
- Snexnf' Yrzzn
- When trying to solve an integer program, remember that most things aren't integers!
- Do ALL the bonus problems! Who needs sleep anyways
- Maybe use the integer Farkas' lemma!
- Or duality!
- The last question is mostly about understanding the Simplex Algorithm. Since that is the subject of the course, that should be eeeeeezay, am I right? Just walk around on the vertices of some polyhedron or something!

DANK

1. If you don't take CO255 right now, my only hint is to take it at your earliest convenience. The material is pretty cool, and Bill Cook is even cooler!

CAFÉ “ANGLES”

The “Right Angle Café”, (more commonly referred to as the Math C&D) is a hub for many students, a haven between the classes, and a meeting point for many lost and tormented souls who gather in this refuge before, after (or even during) midterms, average Waterloo days, snowstorms and geese attacks (...average Waterloo days). Now, MC has many great locations [Really? –ED], but the uniqueness of this small coffee and doughnut shop is remarkable. Statistically speaking, since 1996, “Angles” dominated the coffee and doughnut market on campus [citation needed –ED], upping the ante of competition between services serving food to students and... well... Food Services.

The cozy sofas and wide food selection might fool you into thinking that this place is just a local effort to turn the hostile environment of Math building (so hostile) into something inviting, where your friends could gather to hook their computers to the power grid and exchange snarky remarks while munching on food. But don't let yourself to be fooled, for the friendly and somewhat careless exterior of C&D is misleading. Allow me to introduce you to “Angles”, a prime spot for social science research.

“Angles” has been used as a point of study by many student researchers before, but the usual narrative revolved around waste levels, peak hours, food sales and matters regarding the location of the café. For the sake of simplicity, we will observe “Angles” from several dimensions:

- “Angles” as an international student hub
- “Angles” as a local trend
- “Angles” and its architecture
- “Angles” with respect to commodification and on-campus competition

From October of 2016 to February of 2017, I conducted qualitative research on-location, and took the role of an active researcher, directly interacting and carefully recording my observations. The study focused on the role of student interaction.

A common pattern was observed. Students are primarily attracted to their friend circles, and when there are no friends around, they drift towards shared tables and pull out their homework. Apart from diversity in age and culture, I detected language diversity as well. While English was the primary mode of communication, I could audibly differentiate 12 to 14 languages on a single visit so far. (I would like to acknowledge the limitations of my language detecting skills and that there might have been more than 14.)

The C&D finds much of its popularity among those who have classes in the Math building. From within the building, you can following the freshly painted white (what was wrong with yellow!?) corridors, where the boringly pragmatic architecture of MC is broken up by the airy wall of the café. The glass walls give it an open feeling, yet the compartmented structure adds to the coziness.

“Right Angle Café” generally sticks to the cafeteria trends of North America. However, the C&D's status as a coffee shop is intertwined with the academic role of the place, as well as the social significance, such as when board game groups gather.

The aesthetic of high-school cafeterias is visible in “Angles”, as it is a step beyond “teenage sandbox”, to the “twenty-something sandbox”. The role “Angles” plays in the lives of those at different life stages and varying age-groups raises questions about maturity and self-perception: do students move away from places like “Angles” to places like offices solely based on the practical concerns, or in order to assert their maturity?

There are many questions to be asked, and few to be answered when it comes to “Angles”. If you are curious, just watch the crowds of new students walking in, looking around for their friends, their reactions when they can or can't find them, their choice of seating; try to locate their “bubbles” of personal space and attempt to identify your own unconscious “bubble”. Study the herd student behaviour, analyse yourself in the same manner, but don't be too creepy while watching others. Maybe get an ethics clearance. Definitely get an ethics clearance from the board [I note that you conspicuously didn't do this...-ED]. Write a study.

GLORY TO YOU ALL.
AUGUST MARAUDER

AN AGGRIEVED INNOCENT CRIES OUT FOR JUSTICE!

I would like to lodge a formal complaint against **mathNEWS** for allowing my person to come to harm on their premises. There I was innocently relaxing in the **mathNEWS** office, engaging the editors in pleasant conversation, when I was beset upon by some ne'er-do-well who sprayed me in the face with poison [Compressed air. -ED]! There were not one, but two editors present, and neither one lifted a finger to stop the villain. Nor did they take responsibility for this heinous crime. I ask you, what is the world coming to, when innocent civilians can be assaulted in broad lamplight with nary a consequence to the perpetrator?!

A DISTRESSED CITIZEN,
e

**The mathNEWS Twitter:
in case this issue
doesn't fill your weekly
nonsense quota.**

@UWmathNEWS ON TWITTER

IF CLICKBAIT ARTICLES WERE AS AMAZING AS THE HEADLINE WAS, THE RESULTS WOULD SHOCK YOU

If you've spent any time on Facebook, you've probably seen the journalist version of heaping trash dumpyard — The Clickbait Article. If you've ever given the writers ad revenue by clicking on them, you'd probably be more shocked by static electricity on a humid day than the content promised to shock you in the article.

Imagine for a minute that we lived in a sunnier world where clickbait articles lived up to the enticing content the title promised. The following article samples feature real titles from various clickbait websites.

THINK THIS IS JUST A NORMAL SHED? JUST WAIT UNTIL YOU SEE INSIDE...

SWITZERLAND - Scientists at CERN have successfully managed to alter space-time curvature using a new-found particle created with the Large Hadron Collider. This particle, named the Perkins particle, possesses abilities similar to the effects the Harry Potter tents with the Undetectable Extension charm applied. Reports say that this particle will be used in new Ikea sheds that will hit the market in late 2019.

WHEN SHE PLACES A MUG OVER AN EGG, IT DOESN'T GET MUCH BETTER THAN THIS

AREA 51 - CONFIDENTIAL - A mutant alien egg thought to have been kept in containment broke loose last week, resulting in the mysterious deaths of fourteen individuals in Nevada. Government officials have successfully averted further damage from the egg by placing it back in containment using a special containment unit referred to as a Meshed Uranium Gate, or MUG for short. Extra security precautions have been put in place to prevent future incidents.

WHEN YOU FIND OUT WHAT THESE KIDS ARE JUMPING INTO, YOUR JAW WILL DROP

HAWAII — A strange new cult has formed in this small island region of the United States. Reports are surfacing that children all across the island have begun jumping into active volcanoes to bring good luck to the elderly in the villages.

BILL NYE WASN'T ALWAYS THE SCIENCE GUY. HIS STORY MAKES ME LIKE HIM EVEN MORE.

BROOKLYN - Bill Nye is well known for his family friendly TV persona who advocates science and the STEM fields to a young audience. But what many people don't know is a darker side to Bill Nye. When Bill turned 22, his father was diagnosed with colon cancer, and with America's expensive health care system, Bill's family had to go to desperate measures to ensure his father's well-being. With Bill Nye's degree in chemical engineering, he was able to cook Brooklyn's purest meth and sell it at astronomically high rates, paying off all of his father's medical bills in under a year. Known on the streets as

Nyeseberg, he quickly shut down his meth empire when the DEA got on his tail and pursued a career in television to avoid suspicion.

VICE MITT

Send more profQUOTES.

THE mathNEWS READER COLLECTIVE

FANTASTIC NEW PRODUCT, LIMITED EDITION!

Hello everyone! Having trouble on your assignments? Difficulty getting those coveted high grades? Well, do I have a strategy for you! Never again will you have to struggle through proving the provable or counting the countable. The future is here!

I'm here with a new and improved tactic for completing assignments and getting higher grades. You just have to take inspiration from a Oscar-winning movie that tackled themes such as racism and overcoming obstacles.

"You wanna look smart? Answer their question with your own question, and then answer that question."

NICK WILDE, ZOOTOPIA

This one of a kind solution can be yours for only 31.41 payments of \$59.27. Why does it work? Glad you asked! If you devise your own question it can be as easy as you like. Listen to these testimonials from all these satisfied customers! (Guaranteed to have been said aloud by real people!)

I thought it was too good to be true. Turns out it was [great]. It does [...] work.

BEYOND META

This is great! I don't have to ever answer the tough questions that are on my assignments.

VICE MITT

This product is definitely [not] awful. It does [...] work [...] [for] all.

HAT OF CHOCOLATE

YOURS IN AMAZING PRODUCTS,
SHAY BLAIR

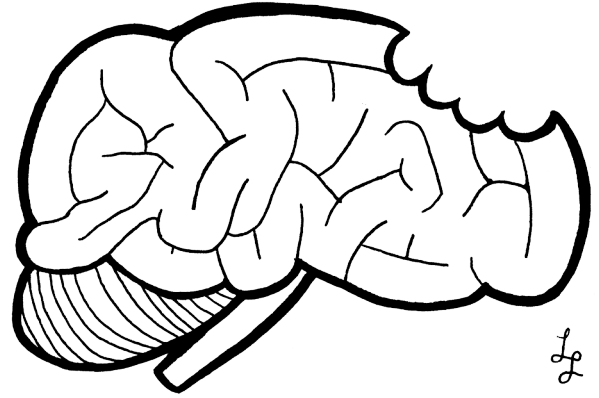
N THINGS I OVERHEARD AT THE ER ON PRODUCTION NIGHT

Instead of hanging out at production night, I got to go enjoy the tender embrace of eight hours (and counting) in a hospital waiting room. So for my article, here are a few of the things I (over)heard!

- An old man who asked every single nurse he encountered for fentanyl. I think he was joking. I hope he was joking?
- Screaming babies. More than I thought could reasonably be packed into a space of that size.
- Some kid who simply could not comprehend that his mom had forgotten his plaid backpack at home by the door, and kept asking her about it as if his continued pestering would somehow make it materialise.
- The nurse coming in and telling me I needed to put on a hospital gown, but it was okay because I was allowed to wear two hospital gowns, with one as a cape slash bathrobe in order to preserve what was left of my modesty. It's not really working, but I don't really have anyone around to impress.
- More screaming children. I guess this makes sense, as hospitals are essentially factories where babies are produced. If I wanted quiet, I would have stayed on campus... well, no.
- The sound of my phone decidedly not buzzing, as the service down here in the bowels of the hospital is abysmal and I'm not willing to shell out \$11+ for a day of internet, even though it would make me a LOT less bored.
- The faint sounds of the television in the wait room where CBC is spending far too long a time discussing the Oscars dust-up last night. Don't we have important political happenings going on right now?
- A bunch of incomprehensible P.A. announcements citing secret hospital codes. They kept repeatedly announcing that an ICU was available if anyone needed it, which was a nice thought but not an offer I felt the need to avail myself of.
- A little kid babbling - I couldn't tell if the kid was pre-language or speaking something other than English.
- Surprisingly few beeps or boops or equipment noises, when you think about it.
- Never mind. A loud, repetitive beeping noise.
- The voices of people who are making the best of it but would clearly like to be almost anywhere else.

And no, I'm not telling you how I got myself here.

VICEROY BUTTERFLY



Zombies: 1
Humans: 0

SOME SPECIALTY mathNEWS PIZZAS (FOR YOU TO TRY THE NEXT TIME YOU ORDER PIZZA)

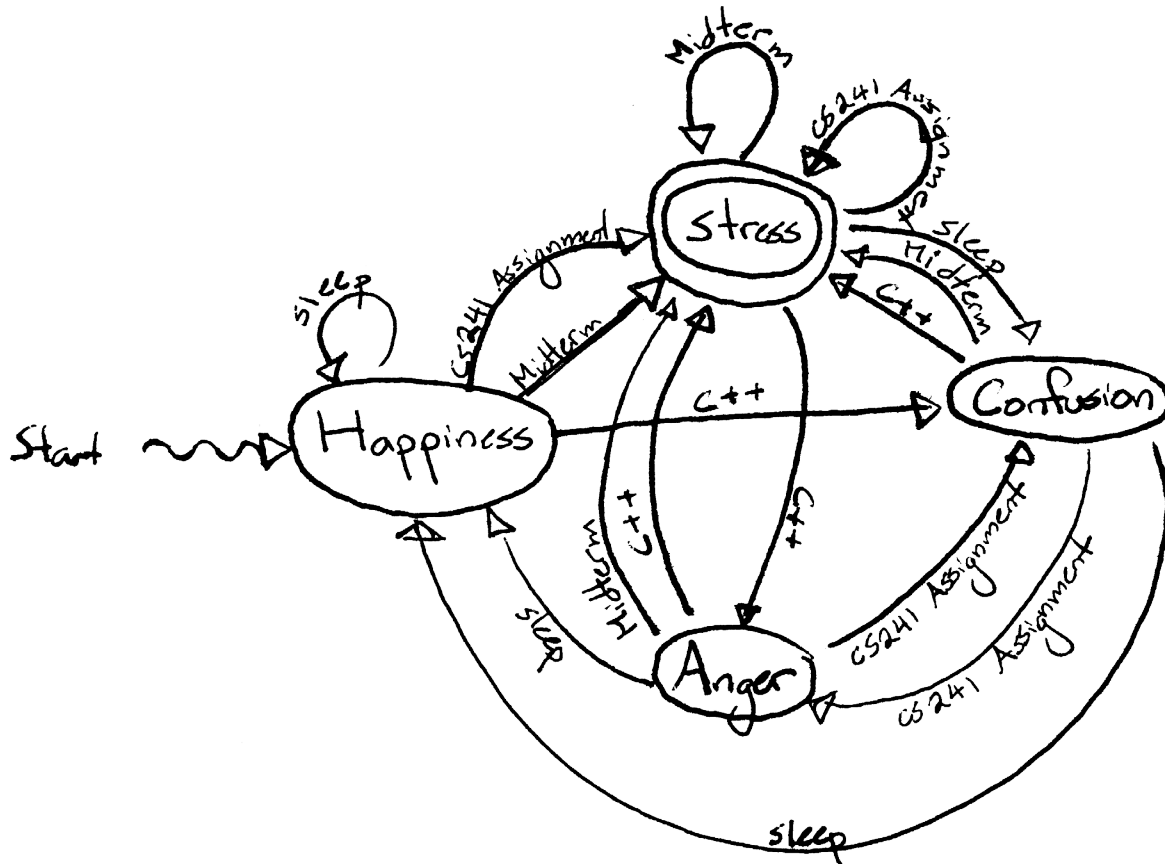
Here at **mathNEWS**, we have a biweekly tradition of ordering a large number of pizzas (often in extra large). This happens to coincide with the timing of our production nights!

Consequently, we encourage all readers (and their friends, and family, and enemies, and, oh heck, why not bring the undead too – it is HvZ season after all) to come to these nights and contribute to **mathNEWS**. You can contribute by writing a good/bad article, drawing a cool picture for us to print, or pretty much anything else you can think of that we can publish in a newspaper!

However, we understand that not everyone can make Monday nights and experience the authentic pizza-ordering experience as presented by **mathNEWS™**. To remedy this, we here at **mathNEWS** have taken it upon ourselves to provide you, our lovely readers, with a list of some of our favourite pizzas so that you, too, can order the pizzas that we do.

- Baxter Special - chicken and bacon on a pesto base
- First Date - garlic, onion, mushrooms, bad breath, etc etc
- Meatatarian/Firefox Meatzilla/Meatpocalypse - All the meats, and only the meats.
- Yeah, I haven't been here long enough to know this, someone please write more...
- [HAWAIIAN! -ED]
- [MORE HAWAIIAN! -ED]
- [I'LL GIVE YOU THREE GUESSES AND IT MIGHT BE BANNED IN ICELAND -ED]

All paths end in stress



HOW TO BREAK UP WITH PEOPLE

Ah, February. The time in the year where everyone starts thinking about relationships. Sometimes, this reflection leads to you to the conclusion that your current relationship just isn't working out

Now that you have decided to break up with someone, the question is – how to do it?

Break up are often stressful awkward affairs, and so to alleviate that we recommend having a prepared joke. Bonus points if you can make a pun perfectly tailored to your situation. A relationship is a personal thing; what better way to show you care than by making a joke that perfectly sums why you are breaking up with them?

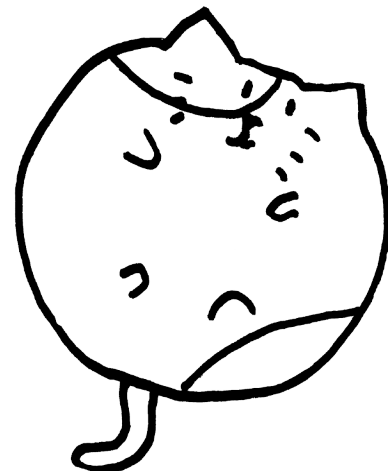
If you are unable to come up with something yourself, you could always use the classic of ending your relationship with a bang. :)

Otherwise, you could just google break up lines. You will find such gems as "Is someone following you? Because I'm seeing people behind your back."

If you think a joke is too short to properly explain why you are breaking up, you can always afterwards send your ex a 6000 word document so that they properly understand all your motivations. This will ensure that your ex has all the closure they need to be able to move on.

Finally, if you think you did well in this relationship, don't forget to ask your ex for a reference letter. This way you can you show your future romance prospects all the excellent experience you have.

BEYOND META



profQUOTES

EPP, PHYS 175

- “ At first there were no problems because people didn't understand anything, but then people started understanding something.
- “ If it's not even close, then we won't bother with the details. That's the value of an arm-wavy argument.
- “ That's what everyone since the beginning of the universe thought. Well, maybe not.
- “ When they were amoebas, but whatever.
- “ Einstein, he's kind of a smart guy, right?

PETER BUHR, CS 343

- “ Prof: "How was your break? I got almost all of my work done."
Student: "I didn't."
Prof: "Of course you didn't."
- “ Let me spin. I know how to spin. Trust me.
- “ Maybe if you look at the documentation for two days, you might find it.
- “ It doesn't matter how much bargaining there is. You're either pregnant or you're not.
- “ There is no baton. It's a crutch to help poor humans understand complexity.
- “ Prof: Software engineering produces patterns over time, like the "Always Go To Church On Sunday" Pattern or the "Getting Into A Wooden Box" Pattern.
- “ Student: Are either of those real patterns?
- “ Prof: No, I just made them up. I lose it when it comes to patterns.
- “ Have you ever gotten home with two different shoes? No? Ah, you guys don't party hard enough.
- “ There we go. We've solved the problem. Of course it doesn't work.
- “ You now have 5 minutes to fix it. You go into panic mode.

MADILL, PMATH 348

- “ That's my little mini-contradiction, Jason Bell style.
- “ [During the lecture after the midterm] It's too early to make exam jokes.

- “ What doesn't suck is the cleanness of this board. I think that's really appealing.
- “ This is such a nice chalkboard. It flows so nicely with the chalk.
- “ The Nullstellensatz is a very powerful tool, that every millennial should know.
- “ Any questions about the '80s? I grew up in the '80s!
- “ I'm more than a math professor! I also know about the 80s!

ZHU, STAT 241

- “ I didn't do a lot, I said a lot of bullshit.
- “ What is this estimator? Where did it come from? This is a bullshit estimator!

BRUNI, CS 116

- “ Go to the C&D and rob them of their napkins! You can quote me!

N THINGS THAT MATHSOC ACCEPTS

- Cash.

THE CASH-ONLY SIGN IN MATHSOC

N OTHER THINGS THAT MATHSOC ACCEPTS

- The inability to read the cash-only sign, during your first visit only
- The asking if we take credit, debit, and/or WatCard, during your first visit only
- Cash
- The act of reading the cash-only sign
- The act of putting away your debit/credit/student cards in favour of taking out cash
- Cash
- Going elsewhere that accepts debit/credit/WatCard because you have no cash
- Possibly waiting for you to go to the ATM to take out cash
- Cash
- Wild excuses to go elsewhere that accepts debit/credit/WatCard to feel less embarrassed about not having cash
- Did we mention cash?
- Cash

THE CASH-ONLY SIGN IN MATHSOC

THE FAILURE OF TRUTH IN THE MARKETPLACE OF IDEAS

In both the Canadian and American political scenes, truth has been shoved to a backburner for political considerations, and the beliefs of those in power. This can be seen as a continuation of policies that have happened for years — it wasn't the Trump, Trudeau, Obama, Harper, Bush, or even Chretien or Reagan governments that started this — though lately it has become more blatant in the disregard for the truth. Some have been more willing to discuss truth, as it would suit their ends at the time, but are willing to toss it away when it becomes unpleasant.

Let us discuss a few examples, the most clear of which is, of course, Trump. His blatant disregard for facts, and his making up of statistics on the spot is now well documented, as John Oliver can attest to in his 13 November episode of Last Week Tonight. The man has literally made up stats on the spot and then *refused* to acknowledge that he has done so, or that the numbers he continues to spout are anything other than total garbage.

But we should not be so hasty to make light, when our own Liberal majority government, led by Trudeau, after having an electoral commission drawn up (which explicitly had a large amount of analysis of different voting systems) decried the formula used to measure representativeness of governments and explicitly showed disdain for mathematics and truth. Worthy of note is that one of the members of the commission is our own Byron Weber Becker. Since then the government has thrown out any idea of electoral reform because it didn't suit their political interests. The facts didn't matter, the scientists and academics didn't matter. To top it all off they made a poll about "electoral reform" which a Grade 12 Data Management student could skewer with ease for how badly it was designed.

Obama of course has a bit of a minor war on whistleblowers. He did commute most of Chelsea Manning's sentence, but between that, and his continued defense of extrajudicial drone killings and the like without discussing their actual effectiveness in the global geopolitical theatre, he has not endeared himself to me.

Harper, of course, is known for his muzzling of scientists and his gutting of the census during his time, explicitly showing that he and his ilk do not care about facts- or evidence-based governance.

Bush's cronies, of course, were well known for pushing the War In Iraq based on WMDs that never existed; in fact, their supporting evidence never even existed.

In Ontario, we have an officially recognized school of homeopathic "medicine" thanks to the Liberal majority here.

I could continue, but I think my point has been made. What seems to follow from this is that people do not give a shit about truth. I have heard people defend free speech of even those whose speech is vile because if our ideas are better, then they should win out in the marketplace of ideas. However, much like other marketplaces, an unregulated marketplace of ideas may devolve into anarchy without certain rules in place to keep the place tidy and functioning. Namely, the marketplace of ideas is overflowing with bad ideas. You might say "if they are so obviously terrible, then we should be able to tell the good ones a mile away," but what if there is an idea out there that explicitly says no ideas are good, that nothing matters, they're all the same? This infection can spread easily if we do not vigorously defend truth and reason. Periods where those in power actually listened to those who told them the truth have come and gone in the past, and are likely to do so again.

More explicitly, there are those who see this weakness and wish to prey on this. Communists will use this to decry all freedom of speech norms, Nazis will use this to attack democracy as a whole. Answering the task of encouraging people to value truth despite the market's apparent disinterest in the entire concept — except when it comes to making money or gaining power — is very tricky. It will likely involve a large revival of cultural and civic norms of truth, openness, and effectiveness.

You can do your part. In your day to day life, call people out on their bullshit. Work with others to try and make good governance happen, even if you have to work with those outside of your ideology, tribe, ethno-group, or what have you. It is imperative that we work on a cultural norm of valuing truth even when falsehoods press in from around us on all sides, drowning out our own thoughts in never ending morass of despair. Be skeptical, and ask questions about what systems of thought people are using to make claims. Write letters to politicians, demand a non-form response, or even book a meeting with your local MP or MPP to force them to sit down and talk to you about why they aren't willing to provide better justification for their government's choices.

Please, even if you know you will fail to do this at all time, please make an effort. How we act in the coming decades will shape our country, society, and all of humanity.

WITH HOPE,
ICE NINE



mathASKS

FEATURING PROF. STEVE FURINO

I am both honoured to answer the inaugural **mathASKS**, and terrified. This august, erudite, deeply insightful journal is read by (Trumpian) millions! When I was asked by **mathNEWS** about contributing to the column, I briefly considered an AMA, though I had suspected that no one would ask me anything, and I thought it best if I did not embarrass myself publicly. The Editors did, however, solicit questions from their outstanding panel of writers, and so, I will turn my attention to those questions. Or some of them anyways — I will ignore the hard ones.

EXTROVERTED: WHAT'S YOUR OPINION ON ARTS MAJORS?

I love them. I was one. Undergraduate degree in philosophy.

Your homework tonight: compare and contrast the 2016 American Presidential Election with the struggle in ancient Rome between the Optimates and Populares, which led to the accession of Sulla.

SOVIET CANADIAN: POWER OR FREEDOM?

Seriously important question. Old question. See question from ExtrovertED.

Your homework tonight: consider taking courses in history, classical studies, political science or psychology.

VICEROY BUTTERFLY: WOULD YOU RATHER FIGHT PORCELLINO OR THE TIE?

I respect them both, and would do no harm to either. See question from ExtrovertED.

Your homework tonight: define a Müllerian mimic.

ARABESQUE: ARE YOU AN ASSOCIATIVE DEAN? I KNOW YOU ARE A COMMUNICATIVE ONE.

I'd rather keep that information closed. Distributing it might damage my identity.

Your homework tonight: join a ring. At the very least, be in a group of friends.

SCYTHE MARSHALL: HAVE WE FIGURED OUT HOW TO TEACH STUDENTS HOW TO PROVE THINGS, YET?

No, though I would say that the revisions in and smaller class sizes of MATH 135 have made a significant difference. I don't feel so badly about not accomplishing this task — it is an unsolved problem since the time of Euclid.

Your homework tonight: figure out how to teach students how to prove things.

DIMINUTIVEREX: YOUR MATH 135 CLASS MADE ME LIKE MATH SO MUCH THAT I DIDN'T REALIZE IT WASN'T THE DISCIPLINE FOR ME FOR 4 YEARS — HOW DOES THAT MAKE YOU FEEL?

Philosophical.

Your homework tonight: write a philosophical reflection on the axiom of choice.

BEYOND META: WHAT QUESTION DO YOU WANT TO BE ASKED?

This is an outstanding question. Brilliant. My answer: how do you get students to complain whine whinge grumble gripe carp protest advocate for change? There were 6828 math students enrolled in classes in the Fall 2016 term, of which not more than 3 came to see me to advocate for some specific, meaningful change in the Faculty. See, for example, the question from The Eurobeat-'Em-Up below.

Your homework tonight: write an opinion piece for **mathNEWS**. Just for the record, I read **mathNEWS** devoutly, so I will read what you write.

THE EUROBEAT-'EM-UP: DOES THE MATH FACULTY (OR THE SCHOOL AS A WHOLE) HAVE ANY PLANS TO ADDRESS THE MENTAL HEALTH ISSUES CURRENTLY CHALLENGING OUR STUDENTS?

Several. I'll provide three examples, but clearly more must be done. First, small communication classes offer an opportunity to (a) meet people and (b) learn to communicate with the people you meet. Second, Faculty Council will be voting on a motion to no longer count WDs as unusable attempts. WDs provide an important mechanism to assist students managing chronic mental issues, and this motion is a direct result of student advocacy. Third, in an expanded MUO, we are considering adding another counselor. We will certainly be adding more advisors.

Your homework tonight: see question from Beyond Meta.

ZETHAR: WHERE DO YOU FORESEE THE MATH FACULTY HEADING IN THE NEXT 5 – 10 YEARS, AND WHY?

Next issue.

Your homework tonight: where do you foresee the Math Faculty heading in the next 5 – 10 years, and why? Publish your response in **mathNEWS**.

STEVE FURINO
MATH FACULTY ASSOCIATE DEAN OF
UNDERGRADUATE STUDIES

Editor's Note: Well, that's it for our first **mathASKS**. Thanks for answering, Prof. Furino! We'll be asking another professor a series of questions posed by the student body next issue, so send yours to mathNEWS@gmail.com, with **mathASKS** in the subject line, and we'll make sure to ask them!

Ever wonder how much filler is in a given issue of *mathNEWS*?

Just count the number of items in all the “N Things” articles.

Oh, and these little black box-quotes.

A *mathNEWS* EDITOR WHO JUST WANTS TO FINISH LAYOUT AND GO HOME

mathNEWS EDITOR SEEKS RECOMMENDATIONS ON OFFICE SUPPLIERS

I don't know how to put this without it sounding idiotic, but here goes:

A couple weeks ago, I found some compressed air canisters in one of the *mathNEWS* office's file cabinets, and I and a bunch of other people who were in the room at the time may have been recklessly irresponsible with them had a little too much fun spraying them on and at things, including our arms and each other.

Anyways, point is, the *mathNEWS* office is out of compressed air, and we'd really like to get our hands on some more so we can keep spraying it on unsuspecting friends who drop their guards in the office clean our computers and keyboards. Yeah. If anyone knows where we could get some more in the KW area, and maybe one of those little tube things that goes on the end of the bottle to make it easier to aim into all those tight spaces like the nostrils under each key, we'd really appreciate it if you passed that information on to us.

Oh, and if anyone knows where we could get some office plants (specifically, Japanese peace lilies), also in the KW area, we'd greatly appreciate it. The air in the office is a bit stuffy, and we could use a plant to freshen it up a bit.

Mostly the compressed air thing, though. I need to feel those sweet ice burns again clean the computers. Yeah.

GEORGE LAMBROU
EDITOR OF *mathNEWS*

N FLAVOURS OF WATER

- Water
- Lemon
- Lime
- Kiwi
- Random fruit
- Alcohol
- Chocolate
- Tea
- Coffee
- Carbonated
- De-carbonated
- Diet
- Zero calorie
- Sugar
- Powdered
- Dehydrated
- Purple
- Lack there of
- ...
- Rock
- Melt
- Iceeeyyy [Ed: *mathNEWS* requires that you perform some gentle pelvic thrusting when you say the name of this flavour aloud.]
- Spring
- Autumn
- Glaciers
- Himalayan
- Fiji
- Wet
- Dry
- Crisp
- Youth

BLOSSOM

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UW'S BASTION OF ERUDITE THOUGHT SINCE 1973

mathNEWS is normally a fortnightly publication funded by and responsible to the undergraduate math students of the University of Waterloo, as represented by the Mathematics Society of the University of Waterloo, hereafter referred to as MATHSOC. *mathNEWS* is editorially independent of MATHSOC. Content is the responsibility of the *mathNEWS* editors; however, any opinions expressed herein are those of the authors and not necessarily those of MATHSOC or *mathNEWS*. Current and back issues of *mathNEWS* are available electronically via the World Wide Web at <http://mathnews.uwaterloo.ca/>. Send your correspondence to: *mathNEWS*, MC3030, University of Waterloo, 200 University Ave. W., Waterloo, Ontario, Canada, N2L 3G1, or to userid mathnews@gmail.com on the Internet.

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gridCOMMENTS

The flurry of dark wings takes flight from the bare trees of winter, bringing with them the foreboding omen they are meant to foretell; it be not the time to see if they will be right as the state of the world is in a right mess — but now is the time for me, the **gridMASTER** pro tempore, to announce the winner of last issue's grid.

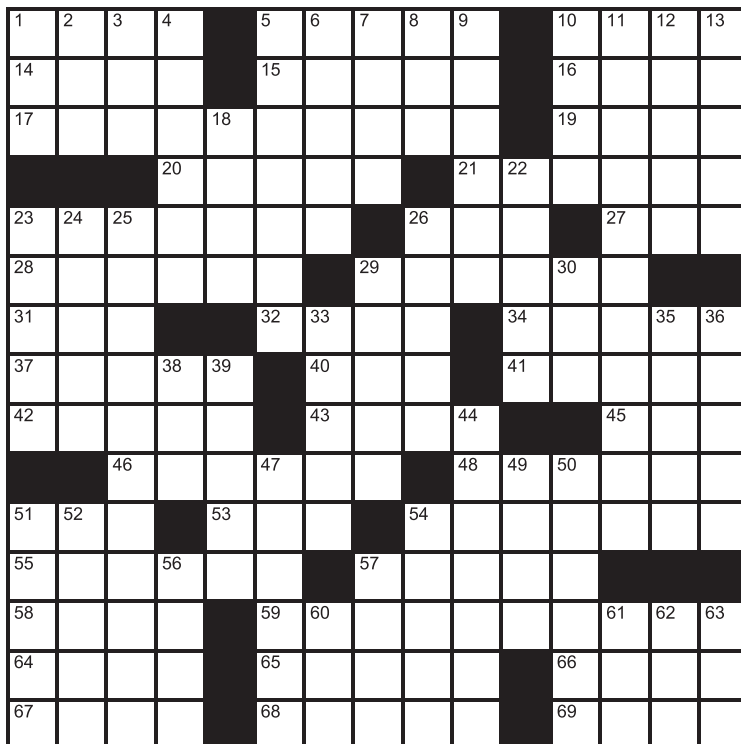
A task most simple really; there were two submissions, one by the regular team of Messrs. Francis, Daniel & Theo, and one by Mr. Mailhot, the latter of which is the only correct solution¹. His solution to the question, "What should be a modern omen and what does it foretell?" is "Reading goose feathers to predict midterm difficulty" is pretty reasonable as well, although I have a soft spot for the other answer, "A North American Businessperson is elected president → The sixth age is upon us". Please, Mr. Mailhot, at your leisure, drop by the **mathNEWS** office and badger the poor overworked editors to claim your prize.

gridCLUES

ACROSS

1. E.g. shell, bubble, cycle
5. River near Ulm
10. Another example of 1A
14. Heed
15. African antelope
16. Math prize name
17. Eagle + Horse
19. Hummus holder
20. Took off like a rabbit
21. Lathers

23. Elephant-goad
26. American ____
27. Superlative ending
28. Crows
29. Cosmic radiator
31. Famous Canadian hockey player
32. English
34. Failed music service
37. Cat sound
40. R to Samsung Galaxy
41. Presentation component
42. Swiss city on the Rhine
43. Tower site
45. Smoke



I think it's high time to mix things up, and what better to do that with than having diabolical experiments that form grotesque hybrids found across the land? It is with great regret that I had been unable to fit "aqrabuamelu" in the **gridWORD** this issue, a creature that no doubt few people have heard of (at least by that name). Thus, this issue's **gridQUESTION**, "Which animals (or animal features) would you fuse to form a new creature?"

As always, submit solutions online to us at mathNEWS@gmail.com or physically placed into the BLACK BOX (temporarily aliased to sliding things under the door of the **mathNEWS** office, MC 3030 [Ed: Actually I think it might be permanently.]). The most correct solution received by 6:30 PM on March 13th, 2017 is eligible for a prize from the editors; if there is a tie for most correct, the tiebreaker is my favourite answer to this issue's **gridQUESTION**.

**MAY MORRÍGAN STRIKE FAVOURABLY,
ZETHAR**

1. "Course materials? (4)" clues "food" as its something that gets served in a multi-course meal.

46. This upgrades to a mercenary in Dominion
48. Sterotypically evil feature
51. A vector
53. Aquarium denizen
54. Man + horse
55. Outdoor stone seating
57. Casual attire
58. Hokkaido native
59. Camelot feature
64. Yuletide drinks
65. Tracked by NORAD
66. Indian bread
67. Censor's target
68. Lock
69. Found on 57D
13. Great time
18. Brewer's kiln
22. Staff symbols
23. E.g. fat man
24. Water Ferris wheel
25. Last issue's theme + Human
26. Wine bottle bottoms
29. Dragon + antlers + hooves
30. Afflict
33. Student
35. It may be bid
36. 1960 Nobel Prize laureate
38. Done, for Donne
39. Sore spot
44. **MATHSOC** is supposed to send these out ahead of their general meetings
47. The real Citizen Kane
49. "Don't bet ____!"
50. Souls
51. Edible seeds
52. E.g. $\varphi \rightarrow (\psi \rightarrow \psi)$
54. Some change
56. ____ bunny
57. Arrakis
60. Sounds like 31A
61. Sheep sound
62. ____ party
63. Eliminate

DOWN

1. Trig. mnemonic
2. It's a wrap
3. Gym unit
4. Feverish malady
5. Niantic's other game
6. Instruments traditionally made of turtle shells
7. Deposited
8. Helps 65A
9. Basket material
10. Family head
11. Roman's incidental remarks
12. Used when short on spirit?

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

A BORED mathNEWS EDITOR

LAST WEEK'S *grid*SOLUTION

D	A	M	P		B	O	M	B		S	T	R	E	W
A	R	E	A		E	W	E	R		T	O	O	T	H
D	Y	E	R		S	E	A	A	N	E	M	O	N	E
A	L	K	A	L	I		L	I	A	R		K	A	Y
			T	E	E	N		D	R	E	G			
M	O	R	R	I	G	A	N		C	O	R	V	U	S
O	L	E	O		E	V	E	R		S	E	I	N	E
O	L	I	O		R	A	V	E	N		A	C	I	D
L	A	M	P	S		L	E	V	I		S	A	T	E
A	S	S	E	T	S		R	E	N	D	E	R	E	R
			R	O	T	E		L	E	A	P			
C	H	I		L	A	R	D		T	Y	R	A	N	T
R	E	T	R	O	G	R	A	D	E		O	R	E	O
O	R	L	O	N		E	R	N	E		O	G	R	E
W	E	L	D	S		D	E	A	N		F	O	O	D

N THINGS YOU CAN DO WITH THIS PAGE ONCE YOU'RE DONE WITH THE NEW *look*AHEAD

- Make a paper airplane out of it.
- Doodle in the margins of the *grid*SOLUTION.
- Try your hand at some origami.
- Make a diorama of some really tiny people playing some alphabet-based variant of hopscotch on the *grid*SOLUTION, and then take some tilt-shifted, close-up photos of it.
- Fold it up into a fan, and use it to cool yourself off come June.
 - Alternatively, use it to whack your opponents repeatedly, causing 1% or 2% damage each time, break their shields, and then, once their damage is high enough, throw the fan at them so that they fly straight up and hopefully off the screen. [Ed: We get it, you play Smash Bros.]
- Re-staple it to the issue so you can keep it forever, alongside the rest of your pristine *math*NEWS issues.
- Leave it up on your wall/bulletin board, and stick the new one over it.
- Leave it stapled to the issue, because you never used the *look*AHEAD in the first place.
- Keep it in your bag as an emergency, impromptu umbrella for the coming Spring rain.
- Make a paper football out of it, and have a game with some mates. [Ed: I hope you mean the football you play with your feet.]
- See how strong of a bridge you can make out of it between two tables.
- Use it to pass notes in the margins during class.
- Check your completed *grid*WORD against the *grid*SOLUTION.
- Cut it into confetti, and throw it on someone. [Ed: Don't do this.]
- Recycle it by shredding it along with some other paper, putting the shreds in a blender with some water, blending it into a fine pulp, then flattening that pulp out onto a mesh screen, pressing most of the water out with a rolling pin, and then leaving it to dry for a couple days or so.
- Recycling it in the paper recycling bins, like a normal person would.

Look Ahead

SUN MAR 5	MON MAR 6	TUE MAR 7	WED MAR 8	THU MAR 9	FRI MAR 10	SAT MAR 11
Day of Physical Culture and Sport (Azerbaijan)	Algebraic Geometry Seminar Model Theory Working Seminar	Co-Op Information Session for IB Math Students Computability Learning Seminar	Bridges Lecture on Platonic Solids as art objects WiCS Dinner with Profs	CS Club Alt+Tab Club Graphs and Matroids Seminar Number Theory Seminar Board Game Night Panic Day	Analysis Seminar Knowledge Integration Seminar @ the Student Success Office	Johnny Appleseed Day

SUN MAR 12	MON MAR 13	TUE MAR 14	WED MAR 15	THU MAR 16	FRI MAR 17	SAT MAR 18
Aztec New Year	mathNEWS 133.5 Production Night Thailand's National Elephant Day	π Day! White Day [Ed: It's also "Bring the mathNEWS Editors' Food and Pie While They Do Layout Day", I swear.]	WatSFiC Movie Night: Doctor Horrible's Sing-Along Blog	Statistics Department Seminar Board Game Night WiCS Movie Night: Hidden Figures	mathNEWS 133.5 Published St. Patrick's Day Last day to schedule final exams with AccessAbility Services	WatSFiC Board Games Day March Break Campus Tours & Open House Events

gamesNEWS

Hey Mathies! As always, Games Nights are running on Thursdays in the C&D from 18:30 until whenever people leave, and anyone can drop in and leave at any time.

With the end of the term coming up, it's time to start thinking about our end of term event! As usual, we will have our 24-Hours Games Night event on the last weekend before classes end; this term, it will be the weekend of 1 - 2 April. As the name of the event implies, we will be playing board games for twenty-four hours: from noon on Saturday to noon on Sunday, we will be in the C&D. It's the perfect time to try out that game that takes forever!

Also, if you have any ideas for new games to acquire, feel free to suggest in the MATHSOC office.

**YOUR GAMES DIRECTOR,
A CRAFTY PLAYER**

MATHSOCNEWS

Hello Mathies! As I'm sure you will all soon know, the pink tie stickers are no more. 😊 This means you can never sticker your Faculty Approved calculator! The MATHSOC office does, however, sell all three faculty approved calculators with the embossed pink tie, so stop by and grab one, and also some candy! 😊

BLOSSOM

ARTICLE OF THE ISSUE

This week's Article of the Issue is "If Clickbait Articles Were As Amazing As This Headline Was, The Results Would Shock You!". Congratulations, Vice Mitt. Honorable Mention goes to "Reviewmenera" by Paru-Paro and "A Farewell to the Pink Tie Sticker" by A [not-so] Mediocre Kitty.

TOBEDETERMINED

Wanna help write **mathNEWS**? Send your articles, profQUOTES, clubNEWS, lists of N things, artwork, and more to us via **mathNEWS@gmail.com**.

Or, y'know, don't, but then they won't show up in the paper.

**A CONTENT-CRAVING
mathNEWS EDITOR**