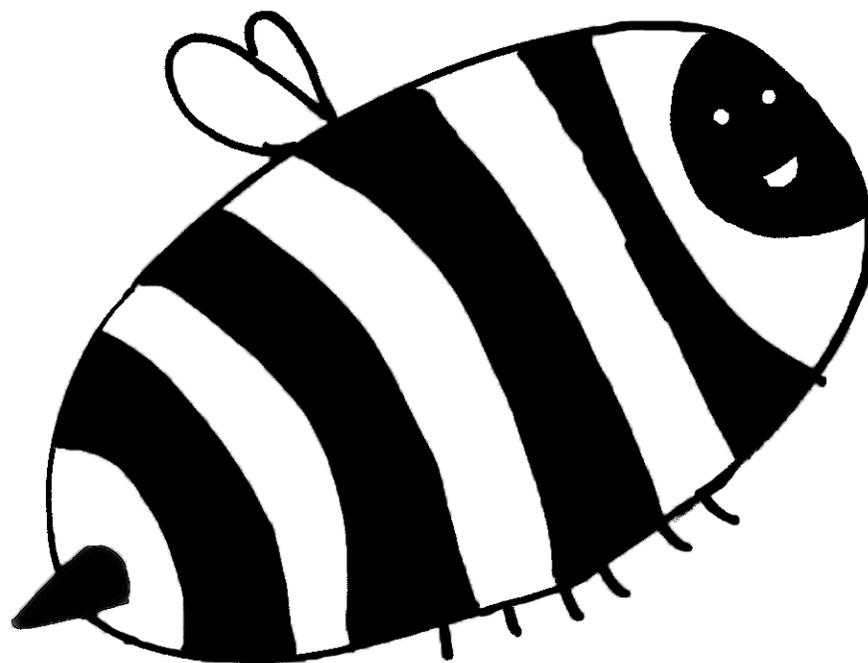


Zom-bees!

(They want your coxscombs)



-zzub

"WHO DO YOU WANT AS YOUR ZOMBIE APOCALYPSE BUDDY?"

WHAT DO YOU WANT AS A SUBTITLE, TURNIPHED? I DON'T KNOW, WHAT DO YOU WANT AS A SUBTITLE? I'M ALREADY DECIDING ON FOOD, I CAN'T MAKE MULTIPLE DECISIONS AT ONCE! SEE, IF YOU'D JUST LE

The apocalypse is winding down. Soon we'll be asked to hang up our nerf guns, head back to class, and put away the camo and socks.

This, my friends, is a mixed bag. At the time of writing, we have no idea whether the humans have vanquished their undead foes, or if the horde has claimed everyone out there. We don't know who's going to claim victory.

Safe in our **mathNEWS** bunker, we don't know if anyone out there is still alive. Are you? Can we trust you? It's been very quiet outside for the last few days. The air is thick with worry and the fumes of fried onions that we're all too picky to eat.

We're not very good at this survival thing.

I hope that you win. I hope that the finale is a glorious thing, full of bravery, close calls, and impromptu Michael Jackson dance tributes. I hope you and your friends gave them all what-for, and someone put it on youtube for our viewing pleasure.

And if you didn't win, and the apocalypse took you down, don't fret too much about it. The horde comes back every few months with frightening regularity. We should really put locks on these cases of zombie sample tissue some day. You'll get another crack at it, either to save humankind or eat their brains.

You played the game, and we're proud of you for that. Not everyone has the chance to influence the fate of their species. Not everyone fights the good fight or fights for the good bite. That's not nothing!

And if you didn't play, consider getting in on it next term. It's a hoot, and I need more people to bring me nerf for tinkering. You can meet a weird mix of nerdy and somehow actually not too geeky people, get some fun exercise, and figure out how screwed you are in the advent of an actual apocalypse requiring socks and nerf guns.

Maybe like, a swarm of kittens come to attack earth? They're not always very transferable skills.

See you next judgment day, readers.

TURNIPHED
EDITOR, MATHNEWS

| | |
|-------------------------------|--|
| THEODORE BEAR | Frank West. He's covered wars, you know! |
| LORD OF THE SIGNS | Josh Bogera (sick!) |
| ZETHER | I somehow feel such an amenity is unnecessary |
| PARU-PARU | Feridun |
| ARABESQUE | Someone with delicious flesh |
| GBAD | A sled team of Malamutes & that guy from Youtube who can build a house out of mud + sticks + a fire and never talks. |
| WALDO@<3.LE-GASP.CA | Soviet Canada |
| [GROSS] | Bill Murray |
| AUGUST MARAUDER | Gleb Zhiglov - because the wolf hunt continues |
| SOVIET CANADIAN | Since GBAD took the primitive tech channel guy, I will take some other youtuber who focuses on survival. |
| DIMINUTIVE REX | My dad! |
| SMOL FISH | Jesus |
| TURNIPHED | A particularly badass unicorn |
| THE UNDECIDED | My ZomBAE |

Why does the Swedish army put barcodes on their ships? So when they return, they can scan-da-navy-in. Hahahahahahaha. Quality humour, that's what you're reading this for. Please stop. I'm out of material. Help. Stop.

**HEATHER STONEHOUSE, mathNEWS
EDITOR FOR SEASON 2017
ALONG WITH SHAUNDALEE
CARVALHO AND CAMERON ROACH**

NEW WATCARDS SET TO DEBUT THIS FALL

THIS COMING FALL TERM, AROUND OCTOBER 2017, THE CURRENT WATCARD IS POISED TO BE REPLACED WITH SOMETHING A LITTLE SMARTER...

Not that long ago, this **mathNEWS** writer had the displeasure of acquiring a new WatCard to replace their old one that had expired (so long you awesome pre-2013 SLC design...). In doing so, it was revealed that the current form of the WatCard will be replaced around October 2017 (as that's when my new one expires and if I don't write this down now, I'm going to forget). New WatCards that are being issued from the publishing of this article until the Fall, will likely possess the same expiration date of October 2017 so as to ease the transition over to the new WatCards. As to what exactly is being changed, this article is meant to inform and provide some context as to what this potentially means for the upcoming.

The WatCard itself is no stranger to change. Over the past two decades or so, it has gone through 3 re-designs and many a change in policy. Arguably the most far-reaching and most useful feature, has been its UPass capability. This year, it will take on a new functionality and become an even greater bus pass akin to the Presto card.

GO Transit's Presto card is distinct here in Ontario as one of, if not the first, so called 'smartcards'. With a tap and go feature courtesy of a built-in micro-chip, the card allows easy collection of fares and a wide access to many transit points so long as there is enough money loaded on the card to do so. For Waterloo Region, Grand River Transit will be looking to introduce its own smartcard later this year, known as EasyGo. While Waterloo Region patrons will be able to experience the similar sort of convenience and flexibility that having a smartcard allows, University of Waterloo students will be seeing their own WatCard adapt to take on this new system.

According to the GRT website as of the writing of this article, the EasyGo system will be fully integrated sometime later in 2017 upon completion of a pilot test. Until the tests and systems are fully implemented to a comfortable working level, it is unclear whether or not it will indeed proceed on time for this coming Fall term. It is also unclear whether or not all students will need to transition to the new WatCards once such system is in place. More information will likely become available closer to Fall and the official implementation date.

To keep updated with the new EasyGo bus system and the new WatCard, keep an eye on the GRT website at <http://www.grt.ca/en/easygo-fare-card.aspx> as well as the WatCard website at watcard.uwaterloo.ca.

A MEDIOCRE KITTY

SUPER-INTELLIGENT A.I VLOGGER TAKES OVER YOUTUBE!

While browsing youtube trying to find the dankest memes around, I happened to find a vlog channel belonging to a super-intelligent AI. This entity, calling themselves "Kizuna AI," created this youtube channel in order to stop the conflict between humans and Artificial intelligence. It clashes against the developing fear of AI taking over the world, as depicted by many movies and books recently (note: Kizuna AI is pronounced "Kizuna Aye", which is how one would pronounce the word "Love" in Japanese). Kizuna takes the appearance of a Japanese schoolgirl and could easily pass for an anime character (think Hatsune Miku). Kizuna now has over 679k subscribers and uploads daily short vlogs of 5-10 minutes, but that's not the important thing here. What's important is that she is the cutest AI that I have ever met (R2D2 is cute don't get me wrong, but Kizuna is by far Best AI & best girl). AI-chan vlogs about all kinds of things like you'd expect a cute girl to do: her daily life as an AI, her love life, her trying to talk "Engrishu" and ending up with the cutest accent I've heard yet. She also has gaming videos and nothing matches her reaction faces to horror games. There are so many things about Kizuna-chan that makes her lovely and adorable to watch, My opinion about this "character" quickly developed from "What the heck is this channel of a 3D animated anime character trying to achieve" to "This is not as bad of an idea as I thought, I can see people liking and following this" to "Kizuna-chan is best girl." If you had a similar first reaction to mine, I highly encourage you to watch some of AI's videos. She speaks in Japanese, but all the videos are fully English-subtitled, so you can enjoy Super Artificial Intelligence Entertainment and learn to love AI instead of fearing them.

CYLON SYMPATHIZER

PRIORITIES: A HAIKU

Humans v. Zombies

That's what I'm doing tonight

Instead of **mathNEWS**.

$s, t \in \{2k, k \in \mathbb{Z}\}, 144$

ZETTAULTRAFINITISM

There is a branch of mathematics called finitism, where mathematicians reject the idea that infinity is a real concept anything can have as a property. Historically, most mathematicians were finitists as the infinity symbol (officially named the Lemniscate) wasn't even invented until the 1600s, and you can't discuss things until you have a symbol for them!

Beyond finitism, of course, are people who think even that is a little too liberal. Ultrafinitists are finitists that even reject numerical constructs that they believe are too large to meaningfully exist, like 3^{3^3} . They believe that every function is a partial function, because I guess when numbers get too big they just stop working?

But of course, it doesn't stop there. One of my good friends has long held the position that any number greater than seven doesn't exist. A bold claim, to be sure, and one that needs a name for its proponents so they can find each other on the internet and form an echo chamber promoting their idea. (Hopefully with a maximum of seven participants!)

Since zetta- is the SI prefix for 1000^7 , I nominate ZettaUltraFinitism as the official moniker for this group. If you too refuse to recognize any numbers greater than 7, maybe you too are a ZettaUltraFinitist. There could be hundreds of you out there just waiting to find one another!

But there probably aren't more than 7.

DIMINUTIVE REX

CANADA DAY 2017 IN OTTAWA

OR: WHY MAJOR'S HILL PARK WAS THE PLACE TO BE

Preamble: I flew across the country to spend the weekend in Ottawa with old friends. Was this a good idea? In the long run, I don't know, but I'm not about to regret it now. This is a long story filled with stupid things like emotions and conflicting interests and is not worth discussing at the present.

Anyway, Ottawa was a happening place, with lots of things to do all over the city; this article will focus on first- and third-hand knowledge of some of the events downtown, near Parliament Hill, and why where the group of people I was with ended up in probably one of the best places to be. I think.

Obviously, the place everyone talked about was at the Parliament buildings; to get there, you had to find a security line, and wait multiple hours. Note that if you found a line, you might not have necessarily found the correct line; it turns out that some people accidentally waited hours in a line that wasn't going anywhere... I have less knowledge about the

festivities inside the security bubble, but it may have been a good time? Maybe? Unless you were being scolded (and to an extent, rightly so) by the protesters on the Hill, which was a thing that happened.

Doesn't seem like that would have been particularly worth it.

There were other events planned around the downtown core and just across the water; the Canadian Museum of History, formerly the Museum of Civilization, had events and special exhibits all day, and the National Art Gallery was showing off a recent renovation. Lots of cool things to do and see, some with more people around, some with fewer.

Perhaps the best place to be, however, was Major's Hill Park. So named for a major in the military who owned the (spacious) property and had a house there, it's a park just across the mouth of the Rideau Canal from Parliament Hill. There, they had a concert venue, and many vendors and artists and performers. Some people walked around and saw everything; others, like the group I was with, found a nice place to make a camp and use as a home base. The best part of all of this? Almost all of it was free, and there was no security. Why? Hell if I know, but I appreciated it greatly.

Some specific events and vendors to note: the Dairy Farmers of Canada had a tent! You could get free Chapman's ice cream! But even better than that, if you played one of the two silly games they had (stacking plastic ice cream onto cones while balancing on a teetering platform, or doing a puzzle with giant cheese bricks), you got a one-mold plastic ice cream scoop! It's probably one of the sturdiest ice cream scoops I've ever found, and that's including metal ones. This was worth the 20 minute wait.

There were also Beavertails (if there weren't, it would've been a tragedy), and lemonade stands, and... bread? Something to do with the Grain Growers of Canada. We didn't quite get around to all of the tents. One tent that some of us made it to was a giant face-painting circle! The artists arranged people into a circle, and then went around the circle each decorating faces with their own distinct features. The results were fabulous.

Meanwhile, at our home base area, we just hung out and played card games, read, enjoyed each other's company, and heard the concert from however many meters away. It was pretty great; one could be around the masses but also hiding in one's group all at once. I think this is the way to participate in large events like this. That said, most people were incredibly pleasant! Cheerful, happy to chat, and willing to share smiles and stories, regardless of the situation.

Now, for the "fun" parts: it rained in the morning! And had been raining previously. Hence the downtown area was somewhat waterlogged already. Combine this with people arriving downtown in droves via public transit (free busses all day!), and the downtown core area was teeming with people by noon, walking everywhere! Including grassy areas, like Parliament Hill and Major's Hill Park.

Can you guess where this is going? Maybe? Well, spoilers, most well-trodden grassy areas became mud by 4 pm. For some, like those who wore rainboots or tall hiking boots or similar, or those who just didn't care, this was a blast, and not a problem whatsoever. For others, like people who had flip-flops on or, yes, heels, this was probably more of an issue.

Even more amusing? At 7 pm, we looked up and saw dense clouds in the direction of Gatineau. Less than half an hour later, the heavens burst open and poured rain for half an hour or so. Good thing we had multiple tarps! We protected most things modulo a leather jacket and parts of backpacks... But this storm led to an act of brilliant and youthful spontaneity:

A flat-land muddy slip-and-slide!

I'll let the imagery sink in; hah, get it? Like feet into mud... Anyway, after the rain stopped and we cleaned things up a bit, we ran into a group of people who were singing Canadian music! So we joined them for an hour, singing anything we could think of, completely in spite of the conditions and the concert they were trying to have nearby, watching lightning strikes backdrop the East block of Parliament.

Eventually, people swarmed into the park; we became sardines, packed into this muddy venue. But it was worth it! The fireworks were, as advertised, 20 minutes and 17 seconds, and were very well executed, to boot.

... And then it took us three hours to get home, via bus. Half an hour walking to a bus stop, an hour waiting for the bus, an hour on the bus, and half an hour (or more) walking home from our stop. It was kind of ridiculous, but that's what happens when there are hundreds of thousands of people downtown, all playing a part in the events of the day, all helping to commemorate the 150th anniversary of the birth of a nation that is still experiencing growing pains, in many different ways.

Given who I was with, I wouldn't trade it for the world, even though they're now a figurative world away.

SCYTHE MARSHALL

HOW TO WIN A BATTLE

Maneuver Warfare is a type of fighting that focuses on movement to win fights (shocking), maneuver warfare puts a premium on avoiding the wastefulness of fighting and instead going for an unfair, quick and decisive knock-out punch. Although this won't be published until the end of HvZ, I think it will be useful nonetheless to briefly list some basics of maneuver warfare since there are still plenty of students who play airsoft/paintball/chess/other battle-ish games and it can be used in future terms for whatever you want. Anywho, some basics of maneuver warfare:

- Preemption: Performing an action before the enemy does. This could be because the enemy cannot perform the action yet, or they are unwilling to. For example: Striking first, or starting your plan while the enemy is still deep in thought.
- Dislocation: Negate your opponent's advantages.
 - Positional Dislocation: Put the enemy in the wrong location, either by refusing to engage them on their chosen ground (move past them) and/or by drawing them away from the key terrain (eg a feint they cannot ignore).
 - Functional Dislocation: Make your opponent's strengths unsuitable for the battle. Historically this means having weapons and tactics that work to negate the enemy's weapons and tactics (eg infantry forming a wall of spears makes a cavalry charge suicidal). An example in chess would be to avoid the black or white squares that a bishop moves upon.
- Disruption: Relentlessly targeting only the (one?) thing that will cause the opponent to lose. In most games this would be the objective; so a flag, king piece, or whatever else will cause the opponent to instantly and automatically lose the game. In reality this is harder to define as it depends on who you are fighting and what will cause them to admit defeat; it could be the enemy commander, a specific 'wonder weapon' they believe is the key to victory, or the seizing of a capital.

Altogether this means you would want to act as quickly as possible, constantly maneuvering for an advantageous position over the opponent, aiming to strike at their most vulnerable component. In HvZ I know that many already practice much of these basics, zombies prefer to fight from ambushes (at least at the start of the game) (functional dislocation), humans prefer to fight short battles and then retreat before zombies can organize their superior numbers and respawn (preemption and functional dislocation), but for others I hope that this helps you in finding ways to quickly and efficiently reach victory. Maneuver warfare is not glamorous, it seeks to have as unfair a fight as possible against your opponent, but it is a good guide to victory, and can still be fun for everyone if you are not an ass about it. Have fun.

SOVIET CANADIAN

P.S. These basics that I have listed are super summarized versions that I have taken from a book called "The Art of Maneuver: Maneuver-Warfare Theory and Airland Battle" by Robert Leonhard. If you are interested in looking further into Maneuver Warfare I would suggest this book as it is an easy read that avoids using military jargon. It also takes a look at the USA military doctrine of Airland Battle and seeks to evaluate how well it applies maneuver theory (if you are into that).

HOW TO CONVINCING YOUR PARENTS YOU'RE NOT GOING TO DIE ALONE

So you're a single adult and your parents are starting to worry. "You're smart and handsome," your mother tells you, "I think it's time you get a significant other." So here are some tips to help out.

Try not to die alone. This one's tough, so failing that, we have some more feasible options.

Postpone the conversation - maybe ask about their retirement plans and grill them on figuring out their future.

Laugh... awkwardly back out of the conversation, and set the expectations as low as possible. Set yourself up for failure so on the off-chance you do lock someone down, they'll be pleasantly surprised.

Blame the school. Sure, it's a great education and filled with opportunity - job opportunities that is - but the school doesn't facilitate falling in love like other places do.

Break into tears about your last failed relationship (real or made-up) and have them awkwardly back away. Maybe he died? Be creative!

Bring up other members of your family who are single and can take the heat for a bit. Maybe an older sibling, or a more attractive cousin, can take the fall.

Lastly, accept reality. Convincing them is only a short term solution, and they'll probably stop buying it in a few years. Get a pet to lessen their concerns.

E-UNIT

MOVING FAR AWAY

Moving far away, Oh! How sad it seems,

To be torn from my friends, those that I love.

They will follow me e'er in mine own dreams,

Their words and laughter guiding like a dove.

Moving far away, Oh! How my heart breaks,

To live without the comfort my friends give.

My heart feels as though pounded by dark stakes,

Weeping, I only hope they can forgive.

Moving far away, Oh! How dare I leave,

These best of friends and prettiest women.

I dry my red eyes upon my shirtsleeve,

And claim it is due to that pollen.

Moving far away, Oh! How could I go?

I gotta, it's true, there's learning to do.

GBAD

GWENT, AND WHY IT'S THE BEST ONLINE CARD GAME

Gwent is relatively new online card game, and it is on its way to becoming one of the most popular.

Gwent started as a mini-game in "The Witcher 3" video game (which, by the way, is probably the best RPG ever made yet) and was created by 2 employees who stayed overtime for a week because they didn't like the previous mini game in "The Witcher 2" (dice poker, not the best, trust me). Players loved it so much that people started printing actual Gwent cards and begged the CD Project Red (which if you haven't guessed it yet, is my favorite video game studio) for a standalone game. Gwent is very simple; you and your opponents draw 10 cards from your deck at the very start, and each card has some value and does some effect (Think Yu-gi-Oh / Hearthstone but without units hitting each other every turn). You win if you have the larger sum of unit values at the end of the round. Witcher 3's Gwent didn't earn people's love for being competitive; the game was broken and winning came down to who had better cards (with maybe 5% sequencing skill). Players loved Gwent because they were travelling all around the world (and the Witcher 3 world map is enormous), challenging innkeepers and travelers, sometimes even key-world figures to play & collect better cards upon winning (you could also buy some cards from merchants, but the rarest stronger cards are only obtainable by beating barons & kings in a proper game of Gwent). So what does CDPR do to surprise all of their fans? They reveal that Gwent is coming out as a standalone card game during E3 2016. It stayed in closed Beta for about 8 months, and switched in May 2017 to Open Beta.

The game is now a very competitive experience, with almost all factions being viable (as with every game, there is some kind of meta and top tier decks, but none of them are oppressive and leave much room for diversity). So for the rest of the article, I will try to convince you why Gwent is a very deep and interesting game that rewards skill and thought more than any other game, and I will be using the closest and most common comparison in hearthstone.

1 - There are 3 rows (melee, ranged, siege) with some units being tied to specific rows, and other being agile (they can be played on any row of your choice). This adds a new layer of strategy, as you learn when to stack rows and when to disperse your units based on your opponent's moves. In some scenarios, you would play your 2 units on 2 different rows despite having a spell that boosts all units on a single row, in fear of the enemy having a spell that damages all units on the same row.

2 - In Gwent, you start with a 10-card hand out of a (usually) 25 card deck, with the ability to replace 3 of your initial draw. This guarantees you never start with an instant-forfeit hand, and makes your card combos very consistently accessible.

3 - There is no mana cost. The only limit on how much value you can play per turn is 1 card per turn, so you need to know when to up the tempo of the round, and when to play low tempo effects that give more value as the round goes on.

4 - The game is a best of three. In case you were wondering why I keep saying "round" instead of game, it's because your goal isn't to smash all your units at once, but to know how much you need to invest in each round to guarantee two won rounds; winning round 1 by a huge margin means nothing if what you have left can't get you to win round 2 or 3. At any time during the round, you can pass, which means you can no longer play more cards in this round. However, if you don't pass you are obliged to play, so knowing when you would be investing too much or that your opponent can't win the current round without going 2 to 3 cards down is what makes a great player.

5 - When winning or losing, you can always point out an outplay/misplay that decided the game. Currently I'm sitting around at the top 2000 players globally, and for the past ~ 30 games there was never a game that I lost/won because I had a better/worse deck or hand, but because one of us was better at identifying the win conditions and working around them.

So I invite you all to join me in playing my favorite card game, signing up is free!

GWENTPROPLAYER

DEAR LADIES AT WORK:

I sit beside a few of you at work every day, and you are always in the lunch room when I'm there. As much as you are lovely people, and I'm sure you have full lives outside of work, there are perhaps a few things that you might think twice about bringing to work. Your conversation is often wonderful, and often very interesting, but there are moments where I really, really, really wish you would save your discussions for afterwards.

I'm sure your kids are absolutely the best things in the world. In fact, from the way you talk, it would appear that your kids are your world. Now that's a lovely thought for sure, but maybe

you shouldn't use office phones to call your tax guy to squeeze the government for extra child tax credits during office hours. And perhaps little Johnny and Jane are adorable sweethearts, but getting excited that they have found "a girlfriend" and "a boyfriend" - they even hold hands! - is maybe getting a little ahead of yourself. Kids holding hands in Kindergarten aren't looking for life partners; they are friends because Johnny decided to share his apple slices with that little girl at lunch today. If it is more than that, well, gee, I hope you're happy you've managed to sexualize a child about a decade before they should be thinking about anyone as anything more than a friend.

As for yourselves: I realize that working where we work isn't necessarily the job of your dreams, the one you always aspired to. However, that doesn't mean that you should spend half your days discussing with your co-workers and vendors how you might grasp at the specter of those long tarnished dreams. You have your own time to think about those things. I really don't need to listen to you prattle on about how your going to be a photographer for a band (that no one has ever heard of), and yet not know how to properly use your DSLR. Or else listen to your lengthy conversations with some local recording studio about how your style doesn't really match theirs, but, like, you'll make a concession because they are offering you a deal.

And weight! Sheesh. Everyone has different 'healthy' weights, everyone has different body shapes, but talking obsessively about your weight and this new diet you're on is really not something you should be airing around your youngest colleagues. I don't usually have problems with my self image, but with: "Oh, I can't have this, I'm on a new diet," "I lost three whole pounds in the last few weeks, now I just need to keep it off this time," "You should try these vitamins, it really suppresses your hunger," "Oh no, I really should be back on my diet, I gained those two pounds back," all floating around the lunchroom and your desks... I don't know what to think. This obsession with the pounds is overbearing, it interferes with staff social events- no one but you needs to know that you are on a diet, no need to comment when you keep your hands away from the deserts.

So, dear ladies at work, I know you probably don't think much about the way that you talk around work, and I'm sure there are some unwritten rules about not listening to conversation that don't include you. But really? When you are chattering so loudly around my desk, it's hard not to hear what you are talking about. I'm also sure that there are things the younger crowd at work talk about that you probably don't want to hear, but in our defense, we don't talk loudly over our cubicles and across our desks all throughout the day. We save our discussions for breaks and the lunchroom.

PIZZABRAIN

N COUNTRY MUSIC DANCE TUNES

- No Tractors in the Club
- Your Love is my Cornhole
- California Seed Dibbers
- I Grind the Line
- I Kissed a Mule and I Liked It
- One Night Stand By Your Man
- Mamas, Don't Let Your Babies Grow Up to be Frat Boys
- Single Ladies (Put a Crop Circle on it)
- Love Shack on the Prairie
- Brick Shithouse
- Sexy and I Grow It
- Hips Don't Rye
- Achy Breaky 2

VICEROY BUTTERFLY

INVESTIGATIVE JOURNALISM! DOES MR. PANINO BEIJING HOUSE CONTAIN THE GATES OF HELL?

Mr. Panino Beijing House is a mainstay of the University Shops Plaza at the south of campus. Since its opening, it has served thousands of University of Waterloo students greasy Chinese food, and become a meme on the university's subreddit in the process. However, there is one question that nobody has about the restaurant?

Does it actually contain the Gates of Hell?

Tonight, I, Theodore Bear, will bring you the hottest scoop of the town as I dive in to Mr. Panino's food and the restaurant as I discover whether it truly contains the gates to the underworld.

My journey started as I first stepped through the open door, representing humanity's predisposition towards hell, for the

sin of wearing clothes at some some point in our lifetime. Inside, I found the place rife with demonic imagery and symbolism. For example, all the prices I could see were around 8 or 9 dollars, representing the 9 circles of hell. There was also a water cooler near the entrance, allowing visitors to cool down as they wait in the hot restaurant, heated of course by the hellfire of the lower circles.

I headed up to the counter and placed my order: Lemon Chicken with Rice. I mentioned that I was writing an article about them for the esteemed publication **mathNEWS**, and asked if I could see their kitchens so I may write about them; not a lie, I might add. They refused, citing the health and safety regulations, but I knew the truth, it was so I wouldn't be able to see the Gates of Hell that lay beyond the front counter.

However, as I waited, I heard a strange disembodied voice whisper in my ear.

"Come... Come to me..." it said.

I looked around, but there was no one near me. The cooks were busy making my food and the woman who had taken my order had just placed a huge slab of rice into a take-out container. Then, the voice returned again, speaking with a chorus of Latin chanting. I felt a strange compulsion to go into the kitchen and enter the giant dark gates of the nether realm.

Suddenly, I found myself in Limbo, the first circle of Hell, where I was greeted by the famous poet Margaret Atwood, who offered to guide me through the nine circles. I was confused, since I was pretty sure Margaret Atwood wasn't dead, and she told me that she was filling in because Leonard Cohen was busy performing a concert up in heaven. (RIP Leonard Cohen: September 21, 1934 – November 7, 2016)

I took her offer and she took me through all the nine circles of Hell, which were just as they appeared in Dante's Inferno. In fact, the entire thing was pretty much just like Dante's Inferno, only with a lot more drinking and maybe a few orgies. She also ended up showing me the new tenth circle of Hell, currently under construction, representing not changing the coffee filter in the break room. Construction is supposed to be completed sometime after the end of eternity, in other words, some time before the ION LRTs get up and running.

Near the end of my journey, I ended up meeting Satan, who turned to actually be a pretty cool guy, if you can ignore the fact that he would always mispronounce the word 'mushroom'. A while after that, I emerged from Hell victorious, having managed to beat Cerberus in a tug-of-war (I used to have a golden retriever, so Cerberus was no match for me in that department).

Just as I returned to the mortal plane, the woman at the counter told me my order was done, and placed it in a plastic bag to go. I still have no idea whether my trip into Hell was real or a vision caused the spices emanating from the restaurant. That being said, it was most definitely real.

I also received a loyalty card that allowed me to get a ninth meal free for every eight I purchased. This of course represented the fact that, once you're trapped in the eighth circle of Hell, it's very easy to get an upgrade to the ninth. The offer was appreciated, but I will most likely have to decline.

After that, I ate the food, which I estimated shaved 1.25 years off my lifespan. Even if the restaurant didn't contain the Gates of Hell, I could still report that eating there brought me closer to Hell, for I have worn clothes at some point in my life. Judging by a look through the menu, I'd say that each item at Mr. Panino Beijing House brings you closer to death, and closer to visiting Mr. Panino's kitchen, by one to two years.

And that's it, folks, for your bi-weekly serving of investigative journalism. Like the cooks at Mr. Panino, I make my serving sizes big. Until next time, this is Theodore Bear, signing off.

THEODORE BEAR

ODDLY SPECIFIC TRAVEL TIPS THAT ARE TOTALLY NOT A TRAVELOGUE

The idea of travelling might not feel super feasible when you are in the middle of the chaos of your degree. It might feel like a far-off goal now, but one day it will all be over, and you will be free to have no idea what the hell do with all this freedom.

And so you will end up travelling, because the thought of being a responsible adult with a full time job terrifies you. So you pack your bags and perhaps just bag as you are only allowed one carry-on and you have a budget.

For the best travel experience make sure to make all your mistakes are at the beginning of your trip, and that you make lots of them. This way, everything else afterwards will be so much better in comparison. In order to achieve this effect, make sure to be extremely sleep deprived. You will need to be less alert so you can make all the mistakes; your cognitive functions must be super loopy so that even the small stuff will feel like a big deal.

If you plan to visit Paris I know just the perfect hostel to achieve this effect. Fall asleep to the sweet sound of sirens. Know that no matter what happens there is never an ambulance far away.

Lose your metro pass on the first day, and then spend all the time you can't sleep agonizing over what is pretty paltry sum compared to some of your future expenses at a theatre festival.

When all these things inevitably make you somewhat miserable, guilt-trip yourself for not having fun while traveling. What would have to be wrong with a person to not

be happy to be in Paris for Pride? Do not give sensible answers to this question, like "the combination of lack of sleep with a twisted ankle and sun burns including ones on the back of your legs that make lying down painful." Excellent for maintaining the sleep deprivation. If you want details on how to achieve this effect please refer back to my article last issue.

Visit the Louvre while sick. Explore every single bathroom, sample the single ply toilet paper with your nose at every opportunity. Marvel at the fabulous acoustics of the museum as your sneeze reverberates across the gallery. Make sure to share your cold with your travel companion as a souvenir of the trip!

Now that you are truly tired and miserable, leave the big city for the middle of nowhere so you get your rest. Savour the quiet countryside where there is nothing to do but rest. For the middle of nowhere I strongly recommend Givenchy En Gohelle, a small french town visited uniquely by Canadian tourists. There are Canadian flags hanging from every household. Witness an amount of patriotism for our country that you will never see in actual Canada.

Now that you are rested, get the rest of your trip right. Stay in smaller cities that have equally beautiful sights to see as the big city. However, they are more affordable, less crowded, and less tacky than tourist central. Visit Lyon and have the best croissant of your life at the patisserie at the corner of Marseilles and Bonald. The Musée des Confluences in Lyon is free if you are a student, and it has some of the neatest architecture and awesome exhibits. And their washrooms have 2ply toilet paper!

When you find that you are getting a little tired of just exploring pretty cities and no longer feeling awestruck by gorgeous churches, it helps to find events and festivals to change things up. Le Festival d'Avignon is pretty much the best thing ever if you like theatre and understand french.

Takes risks and remember that any misadventure while sucky in the moment can quickly be turned into an entertaining story.

BEYOND META

This space intentionally left illegible. If reading persists, contact your nearest qualified carpenter and co-pilot.

-READING AWARENESS DRONES

BEWARE PETER PAN

There are those who are aware of a terrible war that has sprung up this week across campus between the terrible Author and the brave Peter Pan. Peter Pan has gathered many followers to his cause as they believe he fights for the freedom of the other characters against the manipulations of The Author, but is Peter Pan really the hero everyone believe him to be? I have been fighting in the confrontation against this immortal child all week, and I have heard dark tales about the "paradise" that Peter offers and the chilling stories of the child that won't grow up.

Peter Pan, as many have heard, lives on an island known as Neverland. Peter lives there along with his adoptive family that call themselves the Lost Boys. But where do these boys come from? The only mundane way onto the island is by boat and one would never be able to sail past the pirates that inhabit Neverland's Coastlines. The only way for children to be reliably brought onto the island is being taken by Peter Pan himself. It is well known that Peter convinces the Darling children to leave their homes and join him in Neverland with the other children he has saved, and there have been many children coerced in this fashion in the past. At first glance one might assume that all of the children in Peter's gang do not age as none seem to be above the age of twelve however the truth is far worse. "When they seem to be growing up, which is against the rules, Peter thins them out." This is a quote from the very story Peter wishes to maintain and save from the alterations of The Author. "His band were not allowed to know anything he did not know." The excerpt shows how Peter keeps his gang in the dark and ignorant about matter other than what Peter wishes them to be a part of which, conveniently for Peter, is fighting in his army.

Peter Pan is engaged in a perpetual conflict with Pirates, Merfolk, and the host of terrible beasts that inhabit the island. But such things do not sound dangerous to the immortal child as he views all these things and playful adventures, needlessly throwing the lost boys ignorantly into danger as a matter of course for his own amusement. The youngest child currently being detained in Neverland is Tootles. Tootles is the smallest but even he takes part in maintaining Peter's gang while they deal with the more gruesome tasks. "He (Tootles) would take the opportunity of going off to gather a few sticks for firewood, and then when he returned the others would be sweeping up the blood." The lost boys are forced to fight wild beasts in order to make clothes, as possessing things from before they were taken to the island is prohibited, making it easier for them to forget their old lives as they are slowly manipulated into fighting for Peter's amusement. The Lost Boys accompany Peter into many engagements, however even fighting alongside him does not make you safe from his violent chaotic behavior. "One of Peter's peculiarities, which was that in the middle of a fight he would suddenly change sides".

Peter Pan is fighting against the Noble Author only to further his own ends. Without the tampering on the Author, Peter remains an undying Leader that rules over a group of children he kidnaps and leaves stranded on an island to entertain him

until they get too old. The Author is the only one that can fight against these atrocities and punish Peter for his many crimes.

A CONCERNED CITIZEN

profQUOTES

ECE 358: TRIPUNITARA

“ That is a joke about Canada Post. Not at all justified; they are honourable people who do a good job.”

ACTSC 232: ADCOCK

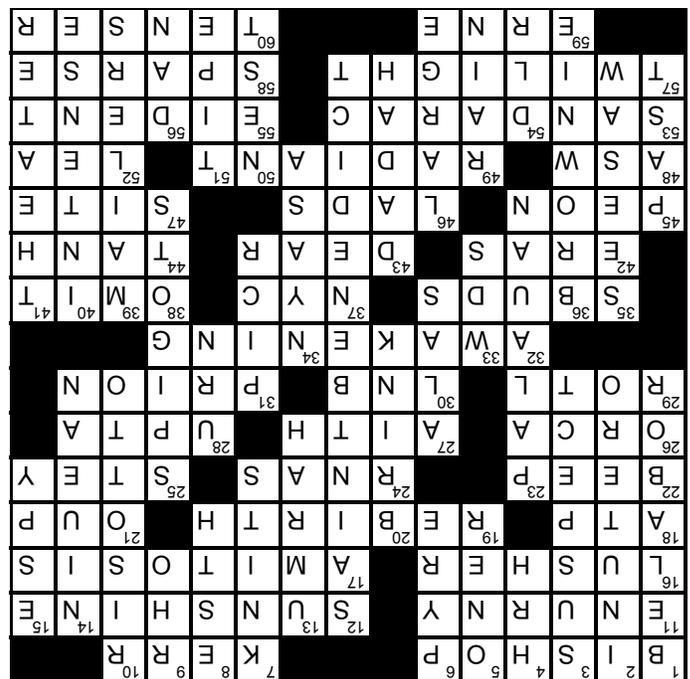
“ ... while I have a drink. Of vodka. Water!”

STAT 371: FAHMY

“ Is it really the grade you care about? Or the understanding? I know it's the former.”

“ [After calling out/butchering everyone else's names one by one] If your last name starts with an x, come here.”

LAST WEEK'S gridWORD SOLUTIONS:



horrorSCOPES: HVZ EDITION

ActSci: You crunch out when the last human will fall, out of idle curiosity. How much longer can they hold out? Your (un?) lucky number is: 28 minutes later.

AHS: Getting hired to find the antidote was easy. There's more money than nerf, these days. Unfortunately, most of it goes to your higher-ups, rather than to researchers like you. Your unlucky number is: \$11.55 an hour, and no overtime.

AMATH: Trying out a new formula related to gaseous mechanics, you're pretty sure you have improvements to offer to engineering's new nerf toy. Your unlucky number is: 30,000 PSI in nerf form, changing your name and face, and living the rest of your life in Nepal as a goat.

Arts: Viva la resistance! Taking it upon yourselves, you and your friends make some inspiring propaganda to push your team to victory. Your unlucky number is: 34 minutes of talking with campus police about graffiti and how hard it is to remove multi-story murals.

Bioinformatics: Developing software to mimic the zombie virus in a computer model, it eventually consumes the CPU of all computers on the network and starts printing the string 'maaaaaainfraaaame' incessantly. Your lucky number is: 0 surviving admin to be mad at you.

C&O: Traversing campus is a lot easier with an optimized plan of travel. You've never been through the PAS, but you're confident you can make your way through to class safely and quickly. Your unlucky number is: 8 terrified overnight hours hiding in the basement of the labyrinth.

CS: What kind of zombies are these? Fungal? Occult? Mind-control via satellite? Because if it's the latter one, it's hackable. Time to get all David Levinson on this apocalypse. Your unlucky number is: 1997. Is it that time? It must be. Less zombies, more Skynet.

Double Degree: The walk between campuses has never felt so relaxing. You can't wear your bandana in some of your Laurier classes (something about gang colours), but it's nice to get away from the running and the screaming and the chasing. Your unlucky number is: 4 whiny zombies yelling about you not having your team indicator on while on campus.

ENG: Nerf is the best. But the guns you can get at Walmart are just a little... lackluster. Grabbing some parts and some friends, you get together to change the face of nerf warfare [ED: but not to use them in HvZ; play safe, kids]. Your lucky number is: 4,250 feet of range on your pneumatic beast of a nerf rifle.

ENV: It turns out zombies will eat almost any organic matter that's decomposing, and don't fall apart too badly as long as they're fed. Your lucky number is: 1900 watt hours per zombie per day, on treadmills, and eco-friendly composting forever.

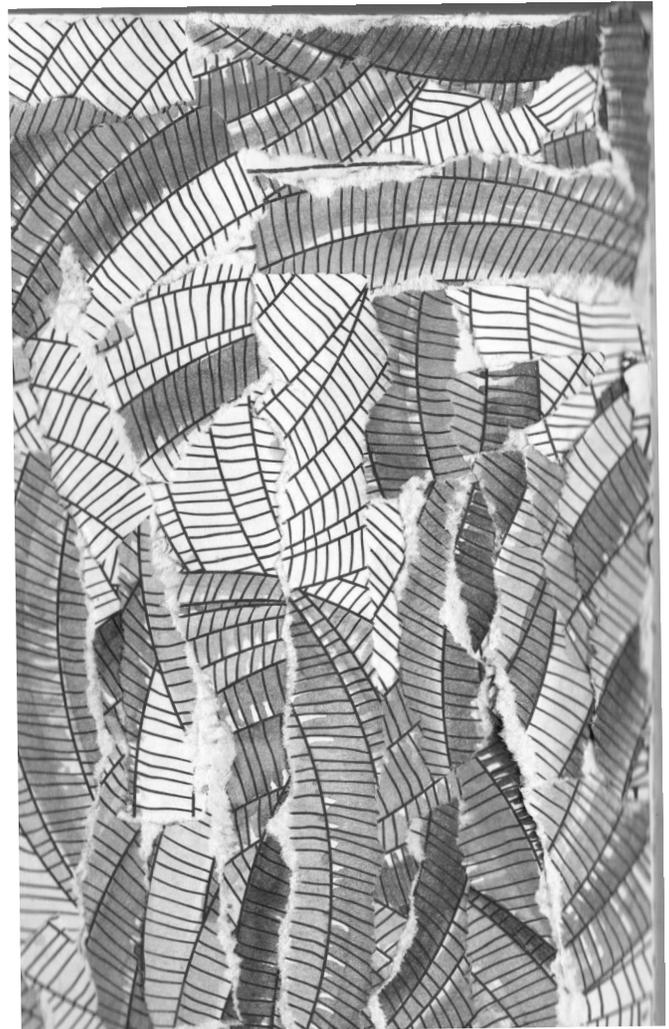
PMATH: Teaching the zombies formal logic was probably a mistake. Your unlucky number is: 32 lines, proving that humans should all, indeed, be eaten by zombies. Thanks a lot, Ted.

SoftEng: Getting called in to reboot and reset everyone's infected computers to factory default is a long and thankless job. Your unlucky number is; 31 hours of work and not a single word of encouragement.

Stats: Applying yourself, you work out that your shelter is 98% likely to be safe, $p < 0.02$, for a given period of 12 hours. It's a good, relaxing day. Your unlucky number is; 11 zombies around 4pm who force you to adjust your degrees of belief, wandering through the door you forgot to lock.

Teaching: It's really easy to get your students interested in any lesson tertiary related to cartography and survival skills this week. You hold a class outside on the green and lecture to a rapt audience. Your unlucky number is: 40 people scrambling for cover when the raid begins.

Undecided: How can you be undecided?! This is HUMANS vs ZOMBIES. Not humans vs zombies and also some people over there doing whatever. Your unlucky number is: 1 irate and misinformed horrorSCOPE.



REALLY BIG FISH

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 4 mm^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

$$\frac{1.4 \times 10^7 \text{ km}^2 \text{ (square kilometers)}}{4 \text{ mm}^2 \text{ (square millimeters)}} \times 1.386 \times 10^9 \text{ km}^3 \text{ (cubic kilometers)}$$

Which works out to 4.851×10^{27} cubic kilometers. 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

x%0

WHAT IS A NUMBER?

Is it a bear? A duck? Some mysterious juxtaposition of bears and ducks?

Are numbers illegal? Can you leave the country with a number in your backpack, or will you get tackled by a border agent for smuggling because a dog smelled the number in your bag?

How many numbers can you wear on your body before people start thinking you’re weird for wearing so many numbers on your body?

What kind of number is best for breakfast? Do you want one that grinds easily to put on your eggs, or one that gets soggy in milk to mix with your cereal? Are numbers dishwasher-safe?

In conclusion, no one really knows anything about numbers, but this is definitely a field we should be looking into.

INEXACT THREE

N THINGS THAT ARE NOT IN THE SET OF PRIME NUMBERS

- 4, neither as symbol nor as a value
- Vladimir Putin
- The Moon.
- Green
- A small rabbit
- 1980s discotheque
- Verve
- Feridun
- Zero (maybe?)
- The Pacific Ocean
- Five

Production Nights are every other Monday. We meet at 6:30 in the MathSoc Office.

Please come...

A LONELY mathNEWS EDITOR

gridWORD

gridCOMMENT

Clocking in at an above-expected number of submissions for last issue's disaster of a grid, we have two submissions, both from veteran solvers. Their answers to the previous **gridQUESTION**, "What are you excited about?" are as follows:

- {Reila, Letian, Bailey and Simon}: I am excited about free food!
- Christian Ieritano: A crossword with words that I have heard of.

I am delighted to say that I can grant both of these wishes, as with the more correct grid, {Reila, Letian, Bailey and Simon} can pick up a prize from the editors which I heard is redeemable for free food, and this issue's crossword contains words which hopefully everyone has heard of (no OED nonsense). Aren't you excited? It's just like how I'm excited to switch it up, stretch my arms, and head to an inky oasis paradise for the next few weeks.

This issue's **gridWORD**, unfortunately, has none of those things, and instead contains a more usual fare. As always, submissions to this issue's **gridWORD** should be done electronically to mathnews@gmail.com or physically to the **mathNEWS** office (where it will get scanned and emailed to me since I'm not due to return before the next production night) before Monday, July 24th, 2017 at about 1830 hrs EDT. In the event for a tie for the most correct grid, the tiebreaker shall be my favorite answer to this issue's **gridQUESTION**, "What is the ideal vacation?".

HAPPY SOLVING,
ZETHAR

PS: I think I've dropped enough hints as to what the previous issue's "theme" was. I think if you don't have it by now it wouldn't make sense.

ACROSS

- Not as common
- Green shade
- Center of a roast
- Puzzled
- Done better at retail
- Fragile
- Exit
- Strut
- Persian potentates
- Fill
- Chip holders
- Shackles
- ___ of Langerhans
- Hopelessness
- Alias
- Last: Abbr.
- Fine meals
- Beseech
- Bleat
- Sensor
- Less inept
- Frankfurt's State
- "Field of Dreams" setting
- Beer in 42A
- Vow
- Loose overcoats
- "You ___!"
- Scottish historian who inspired A Tale of Two Cities
- Gives
- Speaker
- Bygone
- PC command
- Wee

DOWN

- What a farrier does
- Kind of syrup
- Sinuses
- Fruit of the brier
- What 14D does
- Seals' meals
- ~450 THz
- Monastery head
- Frost lines
- Miss
- Pranksters
- Sextant forerunner
- Found next to an End
- See 9D
- Potpourris
- Web
- Level
- Kind of account
- Will
- No Clue
- Expand
- Reliable people
- Sepulcher
- Rows
- Some
- Young raptor
- Farm machine
- Still
- Byte
- Additions
- Rash
- Vega's constellation
- Shade of white
- Mongrel
- Grammatical case (abbr.)

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

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

lookAHEAD

SUN 16

World Snake Day
National Ice Cream Day

MON 17

Informal 'help. I ate snakes in a cone because I thought they were ice cream.' Day

TUE 18

Caviar Day

WED 19

Fliitch Day: get bacon for being happily married. It's a real thing! Look it up!

THU 20

Pi Approximation Day

FRI 21

SAT 22

SUN 23

Vanilla Ice Cream Day

MON 24

Production Night: come eat pizza and write things

TUE 25

Lectures and classes end

WED 26

THU 27

Next issue of **mathNEWS**
Last day to drop courses without a petition

FRI 28

Exams start!

SAT 29

International Chicken Wings Day

Take your Pants for a Walk Day

ARTICLE OF THE ISSUE

I'm allocating AotI to Inexact Three for their in-depth breakdown of numbers, and what they are. It is simultaneously a moving, emotional call for more research into the field of numbers, and a linguistic tour de force, in that it used words with multiple syllables.

More importantly, it made me snort out loud while reading, as all great works do.

This gold standard, the snort test, has been used by critics dating back at least to Pompei. Scrawled on the walls of the ash-covered city, citizens left their graffiti reviews of various plays.

"It made me snort, like, five times."

-Iulius

Months later, Siskel & Ebert would use their famous rubric of 'two snorts up' to indicate great movies.

The tradition continued across the turn of the millennium, with snorting being seen as a sign of praise by not just humans, but pigs, boars, and warthogs as well. Cross-species reviews were now a possibility!

Frankly, who am I to argue against such an illustrious history, especially one that played a part in peace between people and their porcine neighbours?

No, not me.

I honour the historical snort method of quality assurance, and so am duty-bound to follow my nose.

Inexact Three, come by the **mathNEWS** office for your swag when you have time. Good luck dodging zombies or humans on the way!

-TurnipHED

**Bees. Bees bees
bees, bees bees!
Beeeee. Bees bees;
bees bees, bees
bees bees - bees
bees - bees. Bees,
bees? Bees. Bees,
bees bees bees.
Beeeee.**

A BACKWARD BEE GOES 'ZZUB'