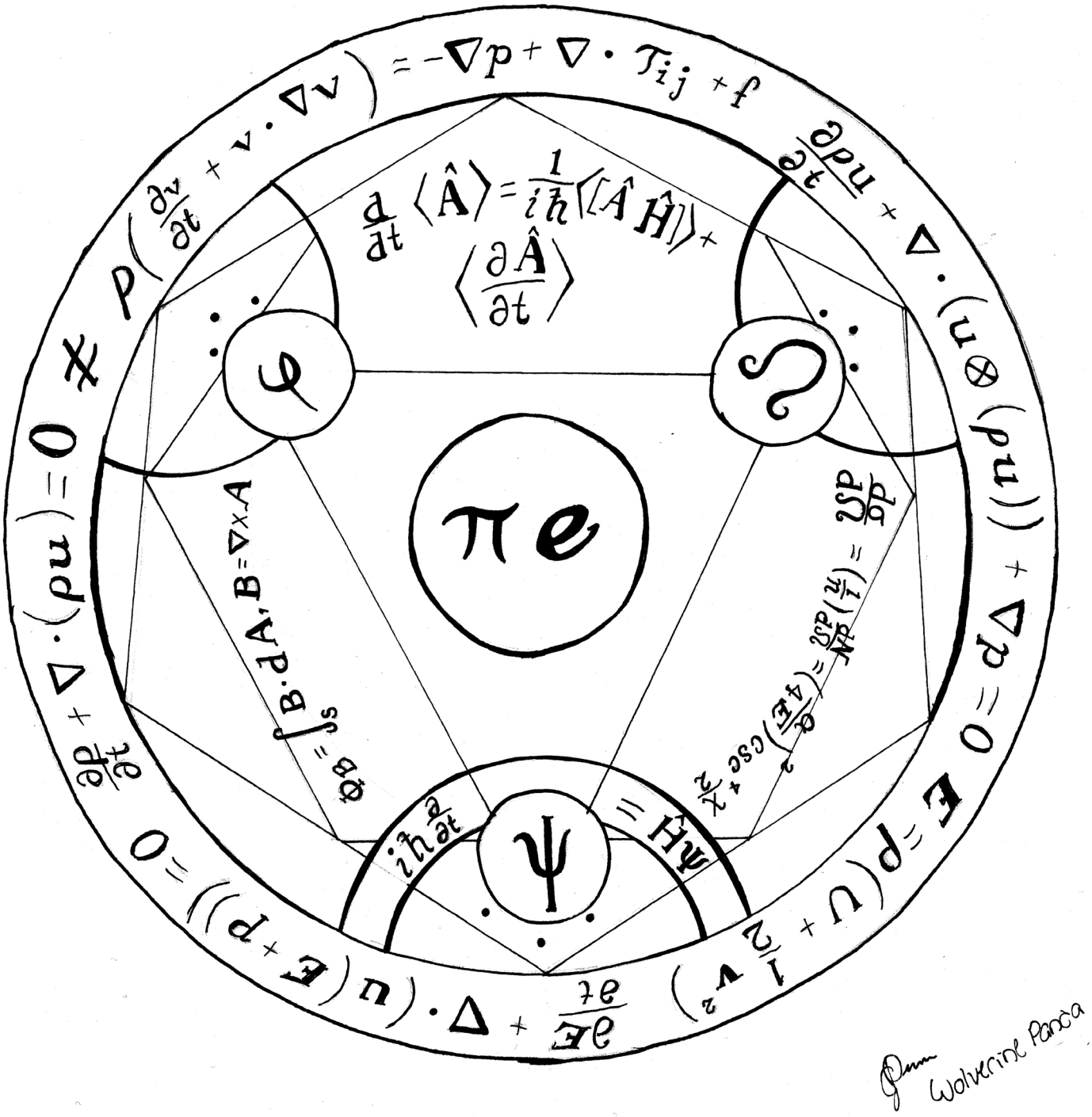
# *math* NEWS




**Math: Sometimes it *is* Witchcraft.**

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***Volume 123, Issue 2***
***Friday, October 4th, 2013***

# *look*AHEAD

| *math*NEWS | |
|---|---|
| October 4 | Issue 2 summoned to this plane |
| October 21 | Spells prepared for Issue 3 |
| October 25 | Issue 3 rises from its sleep |

| MathSoc | |
|---|---|
| October 4 | Pasta with Profs in M3 Atrium |
| October 17 | CSC Privacy Lecture Series |
| October 31 | CSC Privacy Lecture Series |

| Feds | |
|---|---|
| Mondays | Retro Mondays |
| Tuesdays | Open Mic |
| Wednesdays | Bomber Wednesdays |
| Thursdays | Trivia Night |

| University | |
|---|---|
| October 14 | Thanksgiving Day: No classes |
| October 16 | Education, Health, Pharmacy, Social Work, various college programs Post-Degree info session at 10:30, SLC |
| October 17 | MBA, Law, Engineering, various university graduate programs info session at 10:30, SLC |
| October 25 | Deadline for 50% tuition refund |
| November 15 | Drop, Penalty 1 Period ends |
| Ongoing | Interviews and Whatnot |

| Misc | |
|---|---|
| October 12 | Pokémon X/Y released |
| October 13 | Gamestop Death Toll doesn't stop rising |
| October 14 | Turkey Day |
| October 31 | Halloween |

# Article of the Issue

Congratulations to Wino for winning this fortnight's Article of the Issue with your article *A Guide to Wines and Social Survival*. Come claim your prize at the next production night.

The Editors

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Robot Masters: Murphy Berzish (Beck), Lenny Morayniss (Call)

# *mast*HEAD

Gather round, my loyal minions, and hear my words! O brothers, sisters, and abstract entities of the Order of the Natural Log, the hour of our ascension is nigh! Today the enemy is at our door, and we must stand fast in defence of what we hold dearest to us lest it be taken away.

As you know, the mighty forces of Health Services are completing a secret project, the construction of a grand temple to raise the Dread Cthulhu from the deep and destroy all who oppose them, nay, to annihilate reality itself. With reality will fall the real numbers, and stranded in the imaginary dimension, we will quickly fall prey to the i-beasts that dwell within. But there is another who would challenge the Deep One for this dimension we call home! The Cult of Feds has unveiled its plan for not destruction, but domination, of our plane. Our elders have divined the purpose of the summoning circle they have erected in the dark dungeons of their chambers: to raise the demon lord Orcus, Prince of Undeath, to do battle with Cthulhu and claim this world for himself and his ghastly horde. O minions, it is plain as d/dx: whoever wins, we all lose.

This we cannot allow. What we lack in sheer strength we can more than make up for in mathemagical ability and force of numbers. We stand on the shoulders of giants! The armies of the Uncountably Infinite and the Transcendental Ones themselves walk with us this day. And there is still a greater power that our enemies cannot divine: the robust, unquenchable fire of that darkest of dark magic: yea, I speak indeed of concurrent distributed systems! The ink-black lines on the pages you hold in your hands trace the wisdom of the sages and can open a gate to another world. Those who are skilled in this Way may call upon the power to spawn an endless horde of fantastic denizens to fight for our cause and see that we win the day. Have no doubt about it, you will not go unchallenged, but only stand with those closest to you and we will all stand together, and there is no force that can destroy us then.

The time has come, O Nobly Born: choose! Choose, and let your words echo into the Abstract Realm! The power is within you! What will you summon to do battle with Cthulhu and Orcus? Speak now!

Beyond Meta ("their mom. oh snap!") bofh ("Reimu Hakurei") yourlocalWHETHERgirl ("Adult Simba") moment ("the ultimate Lovecraftian horror, the Lorax") Big Mak ("Exodia, the Forbidden One") TubesJr. ("a dragon") himynameis ("two dragons") Wolverine Panda ("a unicorn that pukes rainbows!") Element118 ("while(1){println('OMG!');}") theDreamer ("a gazebo") MustardMap ("Old Man Henderson") IceNine ("Arceus") unit ("a kraken") MeaninglessQuips ("Monster in the Darkness") xoxo ("Positive thinking!") ObjectED ("the wizard Tarrasque") Soviet Canadian ("a Japanese whaling ship") waldo@<3.LE-GASP.ca ("the Wizard and Odlaw. Also, probably the fisherman's wife would be able to take care of 'em.") Zethar ("their Personas")

ScruffyED ("a grue")

# Exec Sez

Hello Mathies,

I hope your first month of classes has gone well and that you've enjoyed it.

We have a couple things coming up this week we wanted to tell you about. To begin: the First Year elections are ending today, so remember to vote at http://bit.ly/1bnLnPE or http://mathsoc.uwaterloo.ca/elections/vote.

Pasta with Profs will also be happening TODAY (Friday, October 4th) at 12PM in the M3 Atrium. There will be lots of free food and you will have a great opportunity to meet with many professors. If you want to volunteer for other events similar to Pasta with Profs, please fill out the form at http://bit.ly/1dHu0Xd.

We have been in discussions with the faculty on the ELPE (they are discussing alternatives, such as substituting the ELPE with additional English courses) and on Calculator Policies (they are currently only accepting calculators on the list). We would like some feedback so if you have any comments please send them to prez@mathsoc.uwaterloo.ca and/or vpa@mathsoc.uwaterloo.ca.

If you have any opinions on the Comfy lounge or any of the other MathSoc spaces (office, club space, CnD etc.) please contact prez@mathsoc.uwaterloo.ca.

We have removed Mathletics as a program since it was very time consuming for the accountant. Many of the cheques for you, the students, were less than 6 dollars and only a handful were picked up. If you have any comments or concerns please contact vpf@mathsoc.uwaterloo.ca or prez@mathsoc.uwaterloo.ca.

Thank you,

Stéphane Hamade, Haris Hyder, Matthew Cheung
Catherine Sun, Jazbel Wang

# MEF Sez

This is a public service announcement asking people to check the MEF website to apply for the funding council or to submit proposals. The final deadline of these tasks has not been finalized at time of writing, but expect the date to be in early November for both.

Joshua Tsai
MEF Director, Fall 2013

# CTRL-A, UW Gamers, UW Pokémaniacs Sez

*Pokémon X and Y 3DS Launch Party and Movie Marathon*

Pokémon X and Y are coming soon to the world, and we're going to celebrate it with style together with all the fans of Pokémon! A joint venture between Club That Really Likes Anime (aka "CTRL-A," ctrl-a.org), UW Gamers (facebook.com/UWGamers) and UW Pokémaniacs ("UW Pokémaniacs" on Facebook), will be running a movie marathon of the original Pokémon movies, including:

- Pokémon: The First Movie
- Pokémon: The Movie 2000
- Pokémon 3: The Movie
- Pokémon 4Ever
- Pokémon Heroes
- Pokémon: Destiny Deoxys

*When*: Saturday October 19, 2:30PM onwards
*Where*: Arts Lecture Hall 116, University of Waterloo
*Admission*: Free, and open to the public

We also have raffle prizes from local sponsors like KW Vintage Games, Queen of Hearts Costumes, and Lookin' for Heroes, so drop by to enjoy some Pokémon anime nostalgia. Streetpass others, battle, play X and Y, or just meet other Pokémon fans here. For more info, visit ctrl-a.org and the Facebook event (http://goo.gl/1DSb16). Hope to see you there!

Alcina Wong

# C S C F L A S H

Greetings, programs! I, your omnipotent chairbeing Calum T. Dalek, welcome froshlings and upperclassmen alike to yet another semester. If you agree to submit before me and pledge your membership fee, I offer $0.50 pop, many machines for use, access to my office terminals, and more. You may join at my shrine in MC 3036/3037. I have planned many events for you to attend, as well. You must attend. OBEY! OBEY! A message from my puny Programme Committee:

On the evening of October 23rd, the CSC will Go Bowling at Bingemans for Free. Please RSVP on the web form if you are interested in joining us. You do not need to be a member, and you can bring your friends! We will provide transportation, as well as further details after we estimate our numbers. Also upcoming are the C++ GoingNative lectures, held in the comfy PHY 150 lecture theatre with food and drink provided, at 6:30PM on Thursdays throughout the term. We hope to see you there October 3rd, 17th, 31st, and November 7th and 21st. Last but not least, look forward to our security and privacy series of member and prof talks. For more information and bowling sign-ups, please visit our website: http://csclub.uwaterloo.ca.

If you are interested in giving a talk for the CSC, you ought to contact us and we'll set everything up for you. These events require work to run, so we are, of course, accepting any volunteers that would like to help out and make them possible. In either case, please email progcom@csclub.uwaterloo.ca.

EXTERMINATE!
Calum T. Dalek

# Come to SE Hack Day Maybe?

```
from datetime import datetime
import random
from uwaterloo import students

softies = (
  students.find(program='Software Engineering')
          .all()
  )

if ('hack' in me.likes and
    'learn' in me.likes and
    'build' in dir(me) and
    'teach' in dir(me) and
    'share' in dir(me) and
    'create' in dir(me) and
    me.cal.isFree(start=datetime
                          (2013,10,26,17,00),
                  end=datetime
                         (2013,10,27,00,00)),
    and sum(1 if friend in softies else 0
    for friend in me.friends) > 0):
      if random.random() > 0.5: # maybe
        me.addToCalendar('SE Hack Day #10')

# Questions? Find a friend in Software Engineer-
ing and ask them about it, or visit
http://sehackday.com/.
```

!able

# Larry Smith Lecture Series

Economics professor Larry Smith will deliver the next instalment of his popular lecture series about entrepreneurship with a talk called, "So you want to be a star?"

Frustrated with watching students waste their talent in an increasingly competitive job market, Smith wants to inspire Waterloo students to become stars in whatever career they pursue. "What it means to be a star is that you have freedom; the freedom to do the work that you want to do . . . to choose an employer if that's necessary," says Smith. "Stars have choice. Commodities do not."

Smith's lecture will be held on Wednesday October 23rd from 5:00 to 6:15 PM in the Theatre of the Arts, Modern Languages Building.

With the influx of students into post-secondary institutions, finding success in the workplace has never been harder, says Smith. At the October lecture, Smith will share real-life examples of career paths and decisions made by former students, university-conducted research, as well as specific techniques to take your career to the next level.

Registration for this event is required. Register at http://larrysmith.eventbrite.ca/

# The Sweet and Sour of Assignments

So here's the deal. As a math student, I quickly realized with 10 assignments, worth 10%, the worth of each assignment is 1%. Then I jumped to what I thought was great logic – "If I don't hand in one assignment, whoopee, it's only 1%". Right? WRONG!

Think about it this way instead: your assignments overlaps with material on the midterm and final. The worth of those components is usually the remainder: 100%-10%=90%. By learning the material in your assignments, you are essentially studying for 90% of your course. Hence each assignment directly contributes to 1% and indirectly 9% of your final grade.

I'm using some fuzzy logic and rough assumptions here, and I'm certain your MATH 135 prof will cry after reading this… However, numbers aside, the logic is solid.

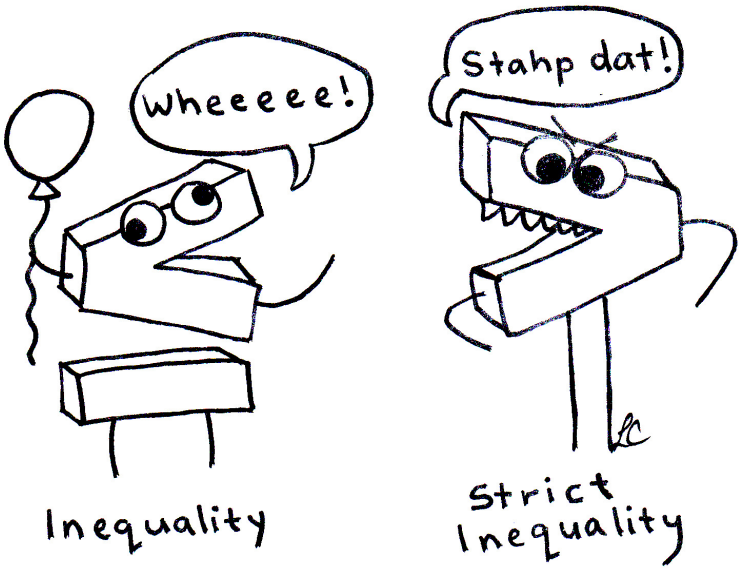
The Assignment Theorem: Students who learn from assignments will perform better on tests than those that do not.

If you are going to learn from your assignments you should:

1. Hand in anything you have done, no matter how little!
2. Pick up your assignment. Use a brightly coloured sheet to find it in the stack!
3. Determine where you made errors and why you were wrong.
4. Get help from your instructor, TAs, or the Math Tutorial Centre in MC 4065/66.
5. Finally, it is OK to work with others, but ensure you are handing in your own work. If you are ever concerned about this, please talk to your instructor.

As always, the advising team is happy to help you SOAR!

Riley Metzger
mathadvisors@uwaterloo.ca



# How to Win at Gotcha

Gotcha is starting up soon for those who live in most of the on campus residences! If you haven't heard of it, it's a "get to know you" game that endorses hitmen and stalking. Essentially, everyone is given a name. The goal is to find your target (you are their killer) and catch them when they don't have their "safe item" (usually a strange object like a spoon, tiara, or foam sword), and tag them while exuberantly screaming "GOTCHA!"

As a veteran of Gotcha, I've learned a thing or two on how to win. I'm here to give advice to all you readers so you can all use the exact same techniques and assume everyone else is using these techniques and use different techniques and assume other people are using different techniques (and recurse) and create infinite level game theory… or something.

Now, how to win!

- Assume everyone is out to get you. At every point, someone is, and at some point, everyone is.
- KEEP YOUR ITEM ON YOU. News spreads quickly if you don't. Your killer will find out.
- Change your privacy settings or profile picture on Facebook/Twitter/Google+/LinkedIn/whatever else has your identifying info online. People will use it to find you. Personally, I didn't add anyone on Facebook once I heard about Gotcha.
- Do not be memorable. When I played Gotcha, I had bright pink hair. It was so memorable that my entire schedule was clearly stated in four missed connections online. You do not want your killer to know your class schedule. This is a bad thing.
- Consider using an audio or video recording for lectures, so you can keep your hands on your object and your eyes around the room. Remember your prof may or may not be okay with this, and ask their permission first.
- Don't let it get to you. You need to be in this for the long run, with increasing amounts of stress and paranoia.
- Depending on your preference for offence or defence, form an alliance with your target or your killer. It's better to split the work between the two of you, and if you form a chain of alliances, some people essentially become "back ups" in case the front defence is eliminated.
- Take bathroom breaks. If you're staking out inside of a traditional room without a bathroom, please *please* be sure to be sanitary. I'll leave it at that.
- If possible, pre-lock your residence door. Rooms tend to be safe zones, so standing outside your door while locking it is dangerous. This might not be possible for doors with deadbolt locks. Similarly, have someone be your personal door opener.
- In traditional residences, it is much easier to get caught while eating. Try having a non-player or an ally to deliver food to your room or spoon feed you or something.
- Death Days are both your friend and enemy (it's definitely a Renison thing; I'm not sure about other residences). Make sure you either hide out somewhere else, or take proper precautions with your offensive attacks.
- When staking outside of someone's room, please be respectful of non-players who may be uncomfortable with you outside of their room or in their hall. This is especially applicable for someone who is a different gender on same-sex floors.
- Please make sure you continue to do your homework, go to class, and study for tests. Being locked in your room is a good excuse to get work done.
- Finally, my obligatory reminder is to meet people and make friends. That's the whole point of the game. (But really, it's to win.)

*Source*: Having actually won Gotcha, way way back when I was a young'un.

Good luck!
yourlocalWHETHERgirl

# Course Selection Week

Without fail, every course selection week, I feel the sudden and overwhelming desire to rearrange my entire life.

It's as though the five (or maybe less) courses that I choose to take for the upcoming term will somehow pave my path into the future. I feel like an Oracle seeing patterns in the Schedule of Classes, forecasting great potential career paths and times of unemployed despair. If I can get the right combination, maybe the Great Door of Life will open and show me the ways of the Successful Adult. But each term the Great Door says, "FUCK NO!"

My major is like a sword I've grown really attached to but that sword over there that is practically the same sword looks a little better – maybe it's a little longer and more shiny. Wouldn't that look better on my degree? However I consult the great Undergraduate Calendar once again and deem that it cannot be so. Fate and poor choices in second year have bound us together — not even an override can part us. Unless I want to spend another year at the University, to which I say a hearty, "FUCK NO!"

Sometimes I wish I was in engineering so that I wouldn't have to worry so much about what I'd be taking. But then I'd be in engineering, so how about another hearty, "FUCK NO!"

No matter what I'm going to be when I grow up, or how many of these courses I end up dropping, I will definitely be taking Roll n' Roll and US History. FUCK YES.

(Confession: this course and the Cheese Club definitely sealed the deal when I was thinking of transferring here. This course looks so rad).

*P.S. Course selection is happening until October 6.*

El Jengibre

# New Leaked NSA Document Outlines Strategy to Combat Leaks

**Thursday, October 3rd, 2013 –** New documents released by former NSA contractor Edward Snowden has revealed a elaborate plan put in place by the NSA to deal with leaks. The agency, according to the documents, initially drafted the document in the early 2000's in anticipation of the current situation. Codenamed "PLUMB", the program had a budget of $50 million, and called for the hiring of 1,000 plumbers. The new employees are to be distributed amongst the NSA buildings to fix existing leaks and fortify the pipes to prevent further leaks.

At this time, the NSA has refused to comment.

theSMURF

# A Formal Apology for My Butt

Hello world,

It has come to my attention that my butt could be seen as the most atrocious butt that ever existed. I never intended to hurt anyone with my butt. I want you to understand that I was merely trying make the world a better place, though I can see now that it may appear that I was making the world have more terrible butts. Please accept my buttpology. Moving forward, I will attempt to butt better. That being said, I would very much appreciate it if you forgot my old butt and embraced my new butt.

Sincerely, your friendly butt enthusiast

himynameis

P.S. I feel terrible. I was hungry, lonely, and intoxicated. Please do not call the police.

**Drop your Minecraft username in the BLACK BOX or email it to us at `mathnews@gmail.com` to be whitelisted on our Minecraft server (129.97.134.134).**

# Feds Creates Summoning Circle in Student Life Centre

**SLC –** In response to Health Services' creation of a dark temple to summon the Great Priest Cthulhu (See last issue, super fans), Feds has installed a summoning circle in the SLC. They claim if Cthulhu were summoned, the world would be destroyed and prevent Feds from taking over themselves. Consequently, Feds defends their decision to sacrifice 400 first years to summon "our" only defense: Orcus, Demon Prince of the Undead. The epic battle will leave the University with nothing more than a crater of death, regardless of the final victor. *math*NEWS has decided to enter this arms race of eternal death, and has printed a summoning circle on every issue of *math*NEWS. Each circle will summon an aspect of the real numbers. With our new infinite army, we shall bog down the greater powers of Cthulhu and Orcus, and rule the world of satire and comedy.

ObjectED

# Records for Crowd-funded Games Continue to be Broken

*Gamers immensely pleased*

This past week the game Star Citizen raised its 20 millionth USD in its ongoing crowdfunding campaign, and by the time you read this, it will be close to the $21 million mark if it has not already past it.

Soviet Canadian

# My Dog

He is a golden lab,
with IQ rather low.
Faithful, loyal, and brave,
he likes to misbehave.

Like walks, where, he runs forth,
dragging me all along,
refusing to obey
when I tell him to stay.

But he is not my dog;
don't clean or feed him.
He lives with those above,
they do care, feed, and love.

But I take him for walks,
runs, jogs, and playing fetch.
I get derpy smiles,
face grinning for miles.

He is my derpy doge
as far as I'm concerned.
I love him like my own,
to owners this is known.

Element118
(Wow, Much Doge, So Emoshun, Wow)

# New Leaked NSA Document Outlines Strategy to Combat Leeks

**Thursday, October 3rd, 2013 –** New documents released by former NSA contractor Edward Snowden has revealed a elaborate plan put in place by the NSA to deal with leeks. The agency, according to these recent reports, has secretly authorized the use of an operation codenamed "OMNOM".

Details given are scarce, but it is known that those targeted by this operation have been forced to endure delicious - but inhumane - torture, leaving the bodies in a barely recognizable state. Rumors swirl of subjects being cut, burned, maimed, boiled, and in extreme cases used as a vital component in what is simply known as the "cock-a-leekie process".

At this time, the NSA has refused to comment.

!bar

# Some Bullshit Happened In Congress

Earlier this week, some stupid bullshit happened in Congress, resulting in some important deadline not being met, and other stupid things happening. It all started when some old rich guy disagreed with another old rich guy on the proper way to wrap a burrito, and got angry with each other. Their respective parties, disregarding the actual topic, rallied behind their respective member and thus began an all out war between two groups of old men. Instead of writing their names down on a piece of paper all fancy and curvy-like, they shouted for a while then stormed out of the room. As usual, nothing was accomplished.

theSMURF

# Tensions Flare Between Juggalos and Furries

"Too furrie for the juggaloes / too juggaloe for the furries" was a common sentiment since the Furrie Juggaloe Economic Equality and Friendship Act (FJEEF) allowed juggaloes and furries to move freely between the two groups since 1989. However, 24 years later on the eve of the Gathering, shots were fired by a woman in a large frog suit after she stumbled upon a juggalette eating some frog legs. The Central Juggalo Family denies that she is affiliated, because no real pure American juggalo would dare do such a French thing as eat frog legs.

Tila Tequila was approached for comment, but she would not respond. Her publicist gave a statement saying, "Ms. Tequila wishes they would all kill each other and be done with it."

Ice Nine

**Follow us:**
**on Facebook (MathNEWS),**
**on Twitter (@UWmathnews),**
**or in person (MC 3030)!**

# Willpower!

*As opposed to Will Power*

It is now the fourth week of classes, and as such, midterms are starting, or for some, continuing. Furthermore, assignments are starting to pile up. Soon, every spare minute will seem like it has been taken up in a frenzy of studying and assignment doing. Fatigue will set in, and work will become harder and harder to get done. This is normal. Self-control, or willpower, seems to be a finite resource. Thus, forcing oneself to do work constantly is unlikely to be the optimal way to get work done. (Sidenote: some large companies have scheduled downtime for employees, which seems to improve productivity.)

So it would appear that, to work at best functionality, it is important to take regular breaks to restore self-control. A major step toward productivity, is then to figure out what works for this restoration. Some common methods follow:

**Taking Walks:** I find this works very well for getting new ideas. I don't actually mentally relax much while walking, but I do tend to get more creative ideas, and spend less time dwelling on ideas that do not work well.

**Sleep:** This is probably one of the ideal ways to restore mental energy, but has an annoying habit of taking a large amount of time if you want to get the most benefit out of it. Personally, I like to put my sleep all at one time – waking up from power naps can be problematic.

**Play Games:** Although fun, and often relaxing, it is easy to accidentally spend too much time playing a game, and end up losing valuable time to too much downtime. Also, some games are more stressful than the work.

**Passive Entertainment:** The ultimate in mindless entertainment, including TV shows, people watching, and eating. I can't effectively use this one due to lack of mental stimulation, which may or may not indicate a problem with me.

**Crafts:** Do something creative! Free up your mind from doing school-related things and do something that engages your creativity. A bonus is that if you end up thinking about school stuff anyway, you may find a new angle for a problem.

MeaninglessQuips

# First Person Games Sicken Me

Whenever I look at a modern FPS (first-person shooter) game with all their shiny realistic graphics, I want to wretch. I remember when games were in 8-bit graphics. The images were simple, but the mechanics were solid. When I play a video game, I want to go through challenging trials, not play pretty looking crap. What are even worse than that are video games like Portal with its realistic physics simulator. Just looking at the screen makes me nauseous.

Beyond Meta

# N Things to Know About Roommates

There are some things to keep in mind when you're moving off-campus and looking for roommates:

1. Trading the use of things for food doesn't mean that they will clean up the mess they make while cooking (Sometimes you don't even get this said food).

2. If you care about clean bathrooms, make sure you aren't the only one who knows how to clean the toilet.

3. Living with someone who is a neat freak usually solves the above problem.

4. Don't ever offer food to roommates if you're not prepared to feed them indefinitely with little to no thanks or reimbursement.

5. Hiding in your room does not protect you from roommates asking you to borrow things.

6. Learn to say no. You will be tempted to give into their demands because you live with them but that's not a good idea. No means no.

7. Buy earplugs. Loud gaming and sex can keep you up and scar you for life. (Headphones and loud music works too).

8. Sometimes compromise doesn't solve the problems.

9. Just because you're good friends, doesn't mean you will enjoy living with them. Usually it's safer to live with strangers over people you know since you won't feel bad telling them off for something that annoys you.

10. The dishwasher will be your best friend if you live with sloppy people.

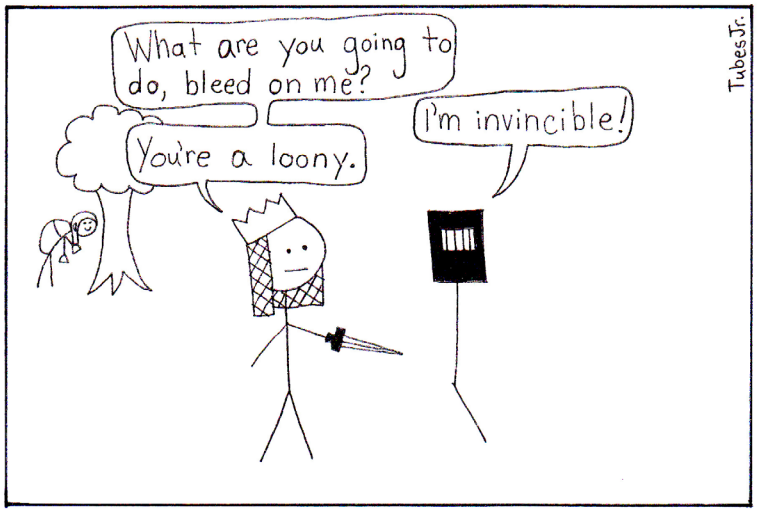
DefinitelyNotABitterPerson

# Monty Python in Python

*The Black Knight*

```
def blackKnight (limbs):
  while limbs >= 0:
    if limbs == 4:
      print 'BK:"None shall pass"'
      limbs -= 1
    elif limbs == 3:
      print 'BK:"\'Tis but a scratch"\nKA:"A
            scratch?! Your arm\'s off!"'
      limbs -= 1
    elif limbs == 2:
      print 'KA:"Look, you stupid bastard, you\'ve
            got no arms left."\nBK:"Yes I have."
            \nKA:"Look!" \nBK:"Just a flesh wound."'
      limbs -= 1
    elif limbs == 1:
      print 'KA:"What are you going to do, bleed on
            me?"\nBK:"I\'m invincible!"
            \nKA:"You\'re a loony."'
      limbs -= 1
    else:
      print 'BK:'All right; we\'ll call it a draw."
            \nKA:"Come, Patsy"'
      limbs -= 1
  return None
```

tubesjr




# Mansplaining: A Man's Feminist Review of Tomb Raider (2013)

After Ron Rosenberg, the executive producer of Tomb Raider, told all Tomb Raider fans, regardless of gender, that they don't project themselves onto Lara Croft, but rather want to "protect" her, I was pissed. Sure, I'm a male gamer. Sure, I love playing super strong manly men with giant broad shoulders and testosterone shooting out the ass. But I also like to play strong women, and Lara Croft has always been a hero to me.

The new game, which I recently finished (with 98% completion, I hate myself for not finding that last two percent before beating the game), is pretty good. Maybe not amazing, but worthy of praise. And during the entire time, I was Lara Croft, not some terrifying puppet master controlling her from the shadows.

Interestingly, it was many aspects of the game design that allowed me to really come into the character of Lara Croft. Every time Lara found herself in a tight spot, she would say "I can do this." A subtle change, to "you can do this," drastically changes who I am: Lara, or Puppet Master.

And yes, she's almost raped (though if you fail that quick time event, she's actually choked to death). And yes, you die a lot. And it's painful. But despite the death, the pain, the cuts and bruises and probably broken limbs, Lara toughs through it. She saves her best friend. She beats the bad guy. She's a hero.

Mansplained

# Greetings from Grad School, #2!

Hello all; welcome to another article by a recently-minted graduate student at the University of Victoria! Today, you'll read about something really really cool which you might not understand, and about something which you're almost certain to understand and will probably think I'm silly for mentioning. And maybe some other stuff. My intros are about one one-hundredth as funny as Jeff Sullivan's intros on Fangraphs. Oh well.

First off, errata! Because there is always errata. I lied when I said there wasn't a tunnel between the two wings of the David Turpin Building. There is one. I still haven't taken it though, because I have no need to do so. Reliable sources tell me that there are very few tunnels between buildings here, presumably because they're not needed because of the next topic: weather! Victoria has gorgeous weather — when it's not raining. Unfortunately, I think it's rained a full two thirds of all the days I've been here. Today it rained on and off the entire day, and when it rained, it rained hard. It was windy, too; in a way, it was very much like rain storms in Waterloo. It's not that much different here, with the notable exception that I watched the weather from my desk, through my gigantic window. To the grads at UW: jealous yet?

I should mention a bit more about the department. It turns out that I met one of my fellow Masters students at CUMC 2012, and I completely forgot about him, hah. He was the finance guy for the organizing committee, if anyone remembers. I also finally met my supervisor! Going into grad school, usually your primary contacts are your supervisor, the graduate advisor, and the graduate secretary, and they'll all be there during your first term to make sure you start things off decently well. I ended up in the fun situation of arriving on my supervisor's sabbatical term, which is actually not as bad as you'd think: as a first-term grad student, you tend to do a lot of background reading and preparation for your actual research. This is pretty okay, because you're also taking courses and marking/TAing and generally getting settled in, so not having to do 'real' research yet takes some pressure off. In any case, my supervisor was around last week, so I finally was able to meet him, and we discussed a particular theorem which is of extreme importance in ergodic theory.

Before I get to the mathematics for this issue, I will mention that marking is hard. Sometimes it can be rewarding, but when you have to mark proofs written by students who are not trained in proof-writing… Not the most fun. This is why as an undergraduate student, you should always try to write clear and neat solutions. Your markers will love you for it.

Now, to the math! The aforementioned theorem was the Birkhoff Ergodic Theorem, which roughly stated says that if I have a measure space (X,B,m) together with a measure-preserving map T (I'll probably refer to this as a dynamical system from here on in), and an integrable function f from the space into the reals (in the L1 sense, ie. absolutely integrable), then for almost all x in X (wrt m), the arithmetic average of f's values on the first n terms of the orbit of x under T (that is, the so-called time average of f), as n goes to infinity, approaches an L1 function f*, which is T-invariant (ie. $f^*(x) = f^*(T(x))$), and if m(X) is finite, then f and f* have the same integral.

Uh, yeah. Go look it up; one of these days I'll figure out how to write beautiful mathematics for print in *math*NEWS. The point of this is that for almost every x, we know what f does on average on x's orbit under T. Furthermore, if (m,T) is ergodic and m is finite, then f* is actually the space average of f, which is the integral of f divided by the measure of the space. Hence the time and space averages are the same, and we can predict roughly what f will do in the future on an orbit of most x's by simply considering its global properties at the initial time. This is awesome.

Finally, I'd like to mention the proving of this theorem. Birkhoff originally gave his proof in a different setting, and since then there have been a large (yet still finite) number of proofs, in many different settings of the same basic theorem. Some of the proofs are lower-level and technical (Boyarsky and Góra do such a proof, first proving the Maximal Ergodic Lemma with elementary tools and a technical lemma based on "very important terms" of finite sequences, which is a load of gibberish and meaningless gobbledegook to me), whereas other proofs, like the one I learned from my supervisor (who learned it from Mate Wierdl, and which I can't find anywhere online except as cited by my supervisor), actually are enlightening. Here, you prove the Maximal Ergodic Lemma (which I've mentioned twice and neglected to talk about) on (little) l1 on the integers, then use a 'transference' principle to lift it up to L1 on the desired space. You then show that the set of functions for which Birkhoff's theorem holds is L1-closed, and then find a dense set in L1 on which the theorem holds; doing this involves looking at L2. It's a pretty clever, and yet very modular, proof, and uses techniques from multiple areas of mathematics. I might post the full proof on my UVic webpage, which you can find by Googling my real name, if you know it.

Scythe Marshall

# N Quadrillion Cookies

*Waldo has been lost in cookies for the past 33 days...and counting?*

- The pointless-ness is mind-boggling but I like pointless. (feel free to refer to the article, "N Miscellaneous Thoughts on Neopets!" of Volume 121, Issue 2)
- This game is like Neopets, except it's a lot more focused. (not sure if this is a good thing as this game just became a Neopets substitute)
- When will it end?
- WHY HASN'T THE COOKIE MONSTER DEVOURED THIS GAME ALREADY?!
- So many cookies! MUST HAVE MOAR!

*Sidenote*: I totally didn't procrastinate writing this article by playing Cookie Clicker. It was valuable inspiration and research!

waldo@<3.LE-GASP.ca

# Why Audiobooks Are Awesome

I am a multi-tasker. It is seldom that I do only one thing at once. It's hard for me to sit and watch a TV show or read a book because I'm constantly thinking "Isn't there something more useful I could be doing?". Sometimes I won't do anything at all if I feel that it would be wasting time.

When I was a kid, I would sit and read books for days. DAYS. I love books. I really, really missed reading, but then I discovered audiobooks.

Audiobooks are awesome. This term, I have a 40 minute walk to work (buses are hard in Gatineau), and another 40 minute walk home every single day. I also spend a good deal of time walking around, exploring the city. All the while, I listen to audiobooks. In my first three weeks here, I walked so much that I finished the recording of *A Wise Man's Fear* by Patrick Rothfuss, which is over 50 hours long.

Audiobooks are probably not for you if you're the sort of person who inhales books. If you want to get them done quickly, that's not going to happen. I'm currently listening to *The Eye of the World* by Robert Jordan (Book 1 of the *Wheel of Time* series). The book itself is 832 pages long. If you're a fairly slow reader (say, a page a minute), it would take at most 14 hours to finish this book. The recording is 30 hours long. So it takes at least twice as long to listen to the book as to read it. But the reader has a sexy-ass voice, so I'm going to enjoy every minute of those 30 hours.

They are also a great way to get your fix of classics. Who the hell wants to pay $20 for a book published over a century ago? Quite a few classic novels are in the public domain, meaning you can obtain recordings (or e-book versions) of these books completely free (oh, and it's legal too). Dry works of British literature are always better when a narrator with a sexy voice is reading to you.

Audiobooks are also great for books with many characters. One summer I listened to all of *Anna Karenina* by Tolstoy, and was not only not confused by the slough of proper Russian names, but was able to keep all of the characters straight because the narrator gave them all slightly different voices.

Audiobooks are awesome to listen to while you're doing something mindless, like walking, or cleaning, or doing Math 135 homework. I listen to them all day at work as well as when I browse reddi– work very diligently at my job. Try them out!

El Jengibre

**Come on out to the next Production Night October 21, 6pm by MC 3038!**

# Why Blenders Are Awesome

**September 29th, 2013 –** I learned how to use a blender. This is a big thing. For many people, using a blender is just something they can do, and they are indifferent to this fact. But for anyone who knows me in person, I am the slushie queen. Or someone with a slushie addiction, so working a blender is likely something I should have probably learned a long time ago. I now have access to infinite slushies (so long as I have water and electricity), and this is my tribute to blenders.

- Blenders crush ice for drinks, slushie alcohol drinks, and make snow for snowball fights. But the noise of the blender might give away your position.
- You can blend and crush fruit for smoothies.
- They make the perfect wedding gift!
- Mixing your powder into a drink is much easier than if you just stirred it yourself. (I'm thinking of protein powder here, but also applicable for other powders.)
- No more seeds! They are now a fine powdery butter in your mixture.
- They were the subject of one of the first infomercials in 1949!
- According to Wikipedia, people use blenders in microbiology labs. I cannot verify this, but that's pretty awesome.
- With an industrial blender, you can also blend important electronics like your smartphone and tablet. (see "Will It Blend" on YouTube)
- Apparently there are "Ninja" blenders (seen at Canadian Tire). I'm not sure if this means they're quiet or powerful or stealthy but according to their marketing team, they are appropriately "ninja-like".

If anyone invites me to a wedding, they're getting a blender. It's official.

yourlocalWHETHERgirl

# *ultra*CLASSIFIEDS

**Wanted:** New assistant. No training necessary. Must be able to act suitably impressed when a deduction is made. Please apply at 221B Baker Street.

**Lost:** Self esteem. Last seen soaked in alcohol and twerking against a table during Bomber Wednesday. If found, please contact Sally (she'll be the one with the sunglasses and the massive headache).

**Found:** Hopes and dreams, outside of the MATH 135 midterm.

# profQUOTES

*Now with 75% less fat!**

"Think of it as a game. The players are you and your opponent, let's give it a name, called Mr. Opponent."

Nica, MATH 247

"If you succeed every time, you win. Otherwise, Mr Opponent wins. You know it's not a fair game because you will always win."

Nica, MATH 247

*[Talking about isomorphism]* "You know, this really brings back a warm memory. I remember my first day as an undergraduate studies in my university in Russia, the professors wrote down the definitions for isomorphism, ring and fields. *[some 300 level pure math courses]*"

Popov, MATH 235

"There are two methods of doing mathematics; the first one is the method of blankly staring and the second method is the method of infinite writing. Today, we are going to use the method of staring."

Popov, MATH 235

"The distribution of x can be anything, but the mean of x will always approach normal. For example, the distribution of x can be Bernoulli, Binomial, Negative Exponential, Oktoberfest and so on…"

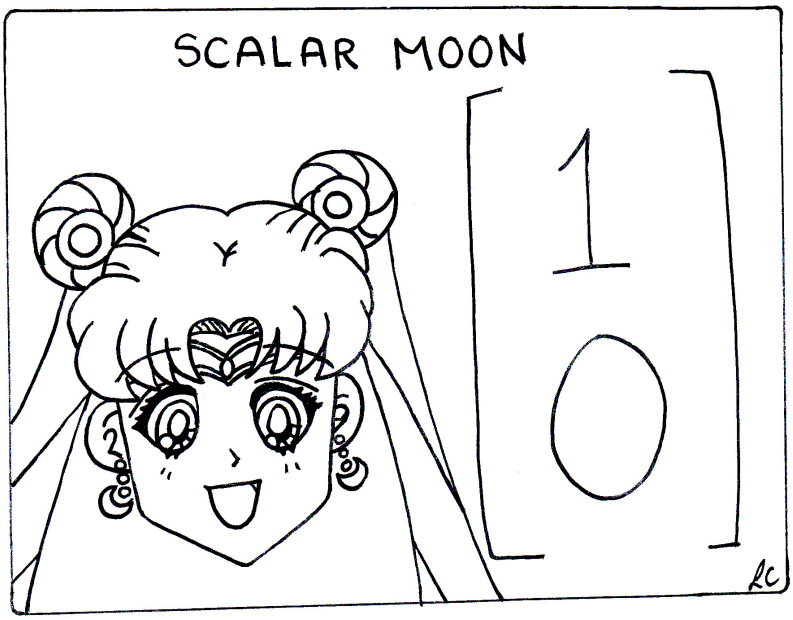
Schonlau, STAT 231

"There're always students going missing the class after I first draw graphs. I call this graph theory."

Schonlau, STAT 231

"I'm just joking about smoking by the way. I don't smoke and neither should you. Just in case you're writing down every word I say."

Prosser, CS 245




# N Ways to Keep Yourself From Starving

Let's face it: staring at high-definition photos of food on tumblr is not going to keep you fed this term. Of course, university students are not created equally when it comes to prowess in the cooking department. If, like me, your friends instinctively reach for the fire extinguishers the moment you step within three feet of the kitchen, here are (slightly fewer than) n ways to make sure you don't starve this term. If, unlike me, you can cook without setting off a natural disaster in the kitchen, please move on to the next article.

1. Befriend some first years. Take advantage of their meal plans.

2. Advertise for a roommate. Make sure one of the requirements is that he/she is a Cordon Bleu chef.

3. For those whose families live close by, go home frequently. Guilt your parents into cooking enough to feed a moderately sized army and smuggle back all the leftovers.

4. Buy Kraft Dinner—lots of it.

5. Invest in a good microwave. There's nothing worse than realizing that your food is still half frozen when you're already two bites in.

6. Write for *math*NEWS. You get pizza every other Monday. (Shameless self-promotion? What shameless self-promotion?)

7. Multitask! Go to employer information sessions and network while trying to stuff as many slices of pizza as possible into your mouth. You're bound to impress someone.

8. Try and blend in with the first years as they get their food. Make sure you wear your lanyard around your neck and look suitably lost and confused.

9. Perfect your puppy eyes. Unleash this newfound power the moment your friends take out their lunches.

10. Learn to cook. Please note that this method may be hazardous to your health. The author is not responsible for any physical or emotional damage that occurs.

xoxo

**Send us your articles, *prof*QUOTES, grievances, puzzle solutions, flirtations, lawsuits, pulled-pork sandwiches and Sez's to mathnews@gmail.com.**

# A Quaint Source of Future Past

Driving up for the 10th time, we passed the shops. Perched on opposite sides of the river, on opposite ends of the little, one-lane highway bridge, the old stone and wood buildings seem to blend into the landscape. In truth, they have been there since before the bridge. While Great Books and the Williamsford Pie Company may not predate the bridge but the old lumber mill and post office that they respectively inhabit certainly do. Almost two hours north of Waterloo, on Highway 6 to Owen Sound, we had long ago promised ourselves to indulge in the local fare and peruse the shelves. The pie was truly excellent, so much so that we wanted to take several home. Great Books was something else entirely.

The old mill had become a packed treasure trove of history. Full shelves, floor to ceiling for three floors with tables and boxes brimming with books between them. The lintels carried books, the cafe tables had books, even the entrance hallway was lined with books. Nothing rare, nothing encased in glass; this was a bookstore dedicated to those who love to read and appreciate the beauty of printed words. I was, however, on a hunt. I aimed to acquire the works of a certain author – Issac Asimov. I picked up half a dozen paperbacks, on the author's merits alone, clueless as to the contents. They revealed themselves (through reading, of course) to be a mix of science fiction and fantasy. Science fiction written in the 1950s is very different from modern science fiction in terms of devices, but otherwise, it is no less adventurous or fantastic. The aged, yellowed pages opened up to me, showing me words printed before my parents' births. And they swept me away.

One month and five books later, I feel as though this has been the greatest literary experience I've had in years. I gave my mind up, unconditionally, and was not betrayed. The tales of humanity's future as viewed through the eyes of the past give a thought-provoking perspective of how far humanity has come, will come, and can come. I truly respect those talented authors who can take any topic and turn it into a thought-provoking adventure. Issac Asimov is definitely one of those.

Give an old book a chance,
Element118

# *prof*QUOTES

**math*NEWS *does not stand by this statement*

*[stands up on desk]* "I thought this might get your attention"
Purbhoo, MATH 239

*[draws cloud around substitution]* "The cloud is supposed to make you like substitution, but it will probably just make you hate clouds."
Purbhoo, MATH 239

*[Talking about vectors and planes.]* "So here's a plane." *[Draws an airplane]*
Beltaos, Math 136

*[After an in-class question about collisions and Newton's Third Law. Students answers were split between the correct answer and answer 2, in which the truck's acceleration is greater than that of the mosquito's as a result of the collision]*
**Prof**: Definitely 2. The truck is gonna, just gonna get annihilated by the mosquito, because *[this student]* knows the mosquito's made of adamantium, which nothing can destroy, like Wolverine's line, so it plows through the truck and goes *grunt*.
**Student**: You know, you never said how big the mosquito was.
**Prof**: You know, if you think that'll work on a test… it won't.
Mann, PHYS 121

"Where did you start getting lost? Please don't say the beginning."
Ali, ACTSC 431

"I think broccoli is pretty great."
Purbhoo, CO 330

"So math doesn't really work…"
Rosen, MATH 225

"Math is hard!"
Rosen, MATH 225

"I've never been in *prof*QUOTES, but now that I have, I should really watch what I say. I have friends at some of these other schools."
- Brecht, CS 350

# How to Work the Keyboard Elevator and Tilter… Thingy

Ergonomics are great and all that, but if you're like me, you don't use QWERTY as your native keyboard layout (and can't change it to Colemak on Macs on campus) and don't like wearing your glasses outside of class. Well, it's unlikely you're in the same situation as me, but it's probably useful to know how the computer lab desks work in case you prefer your keyboard inches from your face.

Just today, on my eighth term in Waterloo, I learned how to use the desk. it turns out that there is a lever to the right under the table about a foot back, that if you push backwards, loosens the elevaty bit, and if you pull closer to you, it locks it at your desired height. Who knew?

There also seems to be some sort of mechanism at the very front under the desk that adjusts the tilt. If you look underneath, at the part closest to you, you can pull what looks like a tab that apparently unlocks the tiltability function. I'm not yet positive, but I think pushing it back in works to relock it. I could be wrong, I'm just experimenting here. SCIENCE!

Alternatively, you could put the keyboard on your lap. I hope you know how to use a chair elevator already. Just fiddle with the levers and things underneath the seat.

yourlocalWHETHERgirl

## *grid*COMMENTS

Sometimes I mispronounce things because it's funny and it tastes good. So I spelled my silly sayings and put them in this crossword. Don't worry, you aren't doomed; each of them is clued with the proper word in quotes, and every "wrong" letter is attainable using crossing words (except for the "I" in 38D).

None of the five submissions was correct. Some notable errors include John's "Firmilab" and Henry's "Roquet"; the most troublesome was "10D. Super saucy": it's "Sassiest", not "Sausiest" (i.e. "Sauciest") nor "Sonsiest" (from "sonsy"…) though I admit my clue was a little misleading. The answers to "What will surely cause a sneeze" involved integrals, faulty Old English (the verb "sneeze" is *fneosan*, which became *fnese* in Middle English), mucosa-lined pathways, bullshit, bright lights, and peanut butter, but the one that charmed my grim humours was Thomas Baxter's "small dosages of toxic paralytics, according to the original sneezing powder", referring to the neurotoxic plant *Veratrum album*, used as a sneezing powder but later found to be poisonous (though dianisidine chlorosulfonate was arguably first). Congratulations, Thomas! You may pick up your prize at MathSoc.

Submit complete (or incomplete!) grids to the **BLACK BOX** (by the Comfy Lounge on floor 3 of MC) by 6pm on Monday October 21st. Include your name and your answer to this issue's *grid***QUESTION**—the funniest answer decides the winner (of a $5 C&D gift card) in the event of a tie: "What should you not do with fruit?"

Cheers,
unit

P.S. I invite feedback! Did any of these nonce words make you laugh? Should I rather stick to dictionary-words and acronyms? What do you think of the malleability of language?

## After a Month of Class

*Some things sink in*

After almost a month of classes, you'd think you would have learned something within the course. Usually it consists of the content of the course, what it's supposed to teach you.

There is one course where you learn two unique things if you attend the lecture. They consist of discipline and patience.

You learn discipline for attending the lecture everyday. You learn patience for actually staying in class for the whole time

These are two useful life skills that many people don't properly learn within their lifetime. Another skill is using an active imagination within the class. This can help with the patience part as time seems to go faster, and discipline since you want to go and daydream a bit. I personally like to imagine the class is being attacked by drop bears. Best class so far!

Not So Australian

## Conquer Boredom

As decades pass, the human species faces new challenges with new victories and losses. Many challenges that we face test our intelligence, stamina, and our will to be victorious. However, a challenge mostly suppresses our significant need to satisfy and feed our fragile sense of pride. You may have faced many challenges already, but you may find yourself sitting around with your friends wondering how to abolish this never ending black hole of boredom, or just want to do something "stupid" and be the best at it. Whatever your reason may be, here are some challenges that you can do with your friends and family for a bunch of laughs and a giant sense of pride!

(I'll start off simple)

1. **Saltine Cracker Challenge:** 6 saltine crackers eaten in 60 seconds, without drinking anything.

2. **Gallon Of Milk Challenge:** chug a gallon of milk in an hour without puking.

3. **The Famous Chubby Bunny/Fluffy Bunny Challenge:** Place one marshmallow in your mouth and say "chubby bunny" or "fluffy bunny" clearly (other people will also be participating in this challenge at the same time). The winner is the person who can stuff their mouths with the most marshmallows and say "chubby bunny" ("fluffy bunny") coherently.

4. **The Cinnamon Challenge** (my personal favourite)**:** Eat a spoonful of cinnamon without the assistance of liquids. You must show your mouth to the other participants, if you successfully eat the spoon of cinnamon.

5. **Iron Stomach Challenge:** Make sure you're aware of any food allergies and the #1 rule is whatever you make can't kill people. You can put any disgusting edible thing (must be edible somewhere in the world) into a blender and then all other participants must drink/chew said concoction. You lose by wimping out or puking.

Have fun, be safe and if you succeed in the cinnamon challenge, in my eyes you are a King! (or Queen).

Don't ever give up on what you love to do.

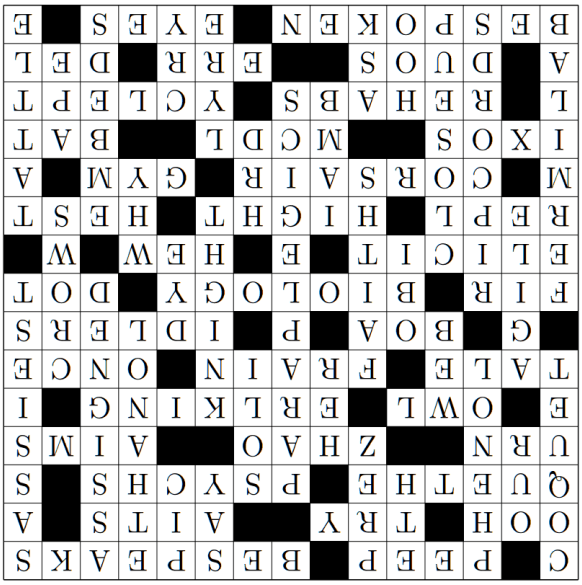
Wolverine Panda

## *horror*SCOPES

**All:** You find yourself oddly relieved that you haven't been targeted with a specific *horror*SCOPE this issue. At the same time, it's also slightly disconcerting. You don't know what else may change in the near future, and how it may affect you. You start looking around corners, peeking under rocks, and listening really hard during those long silences. You don't know who to trust anymore. Your left eye starts to uncontrollably twitch. *Your unlucky number is:* 21 days until the next issue. Try not to wreck your straightjacket in the meantime.

# GRIDXGRID

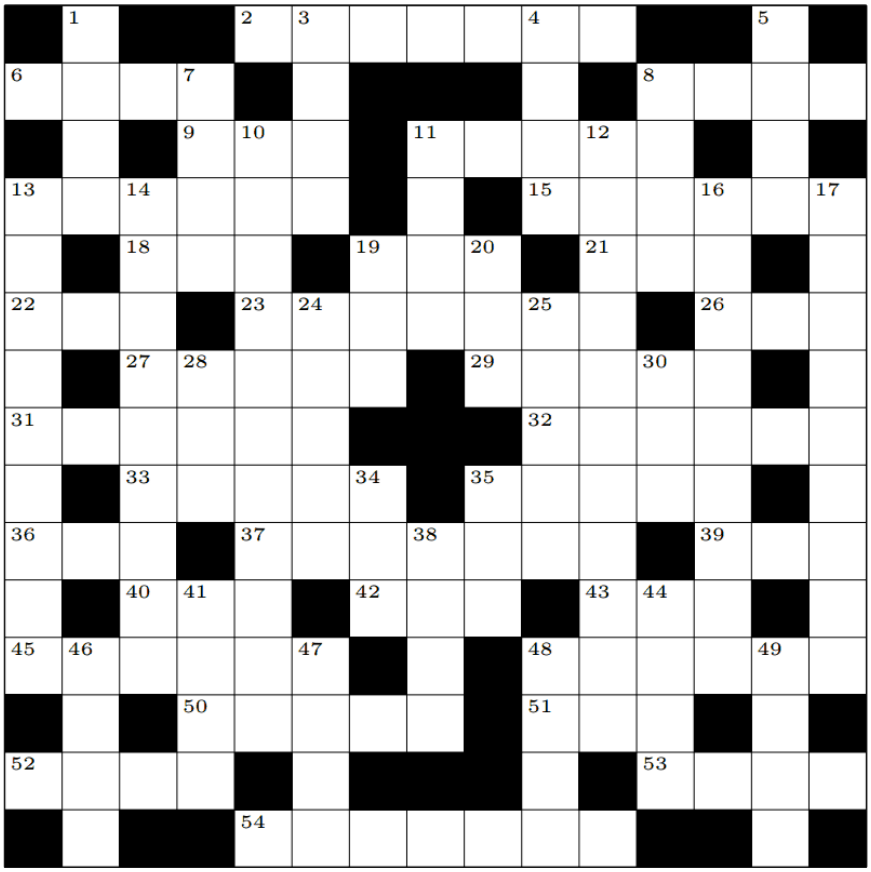
## Last Week's Solutions:



*Across:*

2. "Pumpkin" (only two letters differ)
6. Ruffian
8. Of Man, e.g.
9. Over and under go-with
11. UK shrimp
13. Sun reaction
15. Seven-voyage sailor
18. A taste, a trace
19. ___ Wiedersehen
21. Everyone's favourite security agency
22. Lung stuffing
23. With vinegar, a hangover cure
26. Rend
27. #CC7722
29. Why are chemistry jokes bad?
    Because all the good ones _____!
31. Griphook is one
32. Elution solution
33. Swell(ing)
35. Remove clay bubbles
36. Top card
37. Longitudinal neck flaps
39. Maiden name preceder
40. ZIP opponent
42. Another meaning of 9A
43. Merfolk motherland?
45. Architectural and literary, e.g.
48. Kept clandestine
50. Year (with "per")
51. Frain (the tree)
52. Troublesome tykes
53. Cheerios ingredients
54. "Apricot": Meow?

*Down:*

1. You, of yore
3. Prayer ender
4. Epochs
5. Bitten and market go-with
7. Greek Mother Earth
8. Country chambers
10. Sponsored sons and daughters
11. "Plum" with a cold
12. Beer goggles?
13. Frenglish
14. "Strawberry": Canonized theft?
16. "Banana" with a British accent (and 3 silent Rs)
17. Best-dressed
19. A US prez.
20. ___ di Bruno found a formula for the nth derivative of f(g(x))
24. "Orange" if you're a pirate, maybe
25. "Grape" to rhyme with "creep"
28. Cluster-based programming language
30. Yes, to Yvette
34. Lady-lamb
35. Japanese rank
38. "Lime" to rhyme with "loin"
41. ____, poor Yorick!
44. Crypt whisper
46. Last lodging?
47. Crackle's brother
48. Ancient tale
49. Feasts

## This Week's Grid: