

## "WHY DIDN'T THE mathNEWS WRITERS COME TO PRODUCTION NIGHT?"

AFTER ALL, THERE'S NO WAY THEY HAD ANYTHING BETTER TO DO.

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Editor, mathNEWS

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THE REASONABLE ONE	They were studying for midterms.
SIGSEGV	They were kidnapped as part of a conspiracy to destroy mathNEWS.
VARIOUS PSEUDONYMS	mathNEWS isn't hip anymore. We need to connect with the younger generations of Math students.
THE COUNTER(EXAMPLE)	Because it's issue number 4: objectively the worst number, and issue of the term.
OCTOPODES	Because true artists do their best work alone, in their bedrooms, crying.
DIMINUTIVE REX	They've gone to sleep. We must wake them up when September Ends.
VICEROY BUTTERFLY	Wait, we have a production night?
IHNTLBMCBAMRCA	The pizza had goat cheese on it.
STAPLED	The dogs ate their creativity.
YCLYPED	They were already busy writing articles for Imprint. (Traitors!)
SWINDLED	We didn't cover every square inch of MC with posters reminding people to come.
TBDED	It's better if you don't know.
ITORED	There was too much grease on the pizzas, and our writers wanted to minimize the chance of acne breakouts.

## ARTICLE OF THE ISSUE

This week's Article of the Issue goes to IHaveNothingToLose-ButMyChainsButAlsoMyReallyCleanApartment for their article, The Market Does Not Solve Most Things But It Might Get The Dishes Done. Congratulations on writing an insightful and thought-provoking piece on the logistics of household chore division. Bonus points for communism, as well as breaking our layout with your long author name.

Swing by our office, MC 3030, to pick up your prize! It's a \$25 Ivanhoé Cambridge gift card, for use at Conestoga Mall or whichever participating mall/store of your choice. If you're boring, like me, you can always go to the Zehrs in Conestoga Mall to buy a week's worth of groceries.

# mastHEAD, mastHEAD mastHEAD mastHEAD.

MICHELLE ZHU, mathNEWS EDITOR FOR SPRING 2018  
UNDER PROTEST BY ESTHER AHN, CLYDE BROWN, ANUJ OPAL, AND HEATHER STONEHOUSE

# mathASKS 137.3

FEATURING PROF. DIANA SKRZYDLO

## NEW & CONFUSED: DID YOU ENJOY MY RANSOM NOTE?

Very much! Did you enjoy the Timbits? Did they taste like victory?

## SAMCO: HI! TELL ME ABOUT YOURSELF.

Hi! I've been teaching in the Stats & ActSci department for 11 years, and before that I did my undergrad and master's in ActSci here at UW. I have two kids (both of whom have red hair... what's the probability of that?) and love to sing and do community theatre.

## NEWEST AND MORE CONFUSED: INFORMANTS SAY YOU LIKE TO SING. WHAT IS YOUR FAVOURITE SONG TO SING?

I do! I sing in a professional choir in Elora, and this term with the AcaBellas! I like to sing pretty much everything, but probably my favourite is singing folk songs to my kids as lullabies.

## AC: WHY DID YOU CHOOSE YOUR MAJOR/MINOR?

I chose ActSci because it sounded like a neat application of Math, which I was good at in high school. My dad was an Engineer so I also applied to Engineering, but I chose Math. I also did a Music minor because I've always loved singing and UW has a great music studio program at Grebel.

## STAPLED: HOW CAN A SHY, THEATRE NEWBIE GET INTO FASS?

FASS (the UW Faculty, Alumni, Staff, and Students theatre company) loves newbies! That's one of the great things about it – if you want to try something that you've never done before, (sounds, lights, props, acting, singing, dancing, stage managing, writing, etc) you can show up and we'll teach you. I've been in FASS almost every year since 2003 and loved it every time. I hope you'll come out!

## NEWER AND MOST CONFUSED: WHAT'S YOUR FAVOURITE STATISTIC?

It's almost as likely to match no numbers on a Lotto  $\frac{6}{49}$  ticket as it is to match exactly one number.

## WALDO@<3LE-GASP.CA: ARE YOU ENJOYING THE TERM SO FAR? HOW ARE YOU KEEPING BUSY DURING MIDTERM SEASON?

Pretty well so far, thanks. I love the classes I'm doing, STAT 333 and ACTSC 635 (an Actuarial Communications course for the M.Act.Sc. program.) Spring term is really nice because there are more hours of daylight and for the most part that makes people in a better mood. It's also conference season, so I'm speaking at a few conferences. I'm actually writing this from a hotel room in Quebec.

## NOT A STATS MAJOR: WILL STAT231 EVER BECOME LESS DREADED? WHAT ABOUT STAT330 AND 333? I HEAR ALL THOSE COURSES ARE ROUGH.

STAT 231 is a course about building your statistical literacy, and I think that throws people for a loop. There is some math in it, but also a lot of language: the distinction between an unknown parameter  $\mu$ , an estimate  $\hat{\mu}$ , and an estimator  $\bar{\mu}$  doesn't strike people as important, even though it is. If you approach it as a course in learning the language of statistics, you might find your expectations (ha!) are met. I'm not super-familiar with what goes on in STAT 330, but I think it has similar ideas, just approached in a more theoretical and rigorous way. As for STAT 333, it's one of my absolute favourite courses to teach. I



think Markov Chains are one of the coolest mathematical models, and they are widely applicable: did you know you can model music, disease progression, games, election results, sports, and genetics with them? I see them everywhere now.

## A MEDITOCRE KITTY: DO YOU FIND STATISTICS AND HOW IT'S STUDIED HAS CHANGED SINCE YOU BEGAN STUDYING FOR IT?

That is a great question! Certainly there's a bit more emphasis on computational skills now than there used to be, but probably not as much difference as you'd think until fourth year. I think there's more awareness of the value of statistics now than there was when I was an undergrad, so that influences the size of courses and the way they're taught.

## NARF DERT: HOW MANY TIMES HAVE YOU BEEN ASKED HOW TO PRONOUNCE YOUR LAST NAME? DO YOU EVER THINK YOU'LL SEE THAT NUMBER BECOME LESS STATISTICALLY SIGNIFICANT?

Lol, many times. Here's how to remember it: just switch the 'z' and the 'y', and ignore the 'd' entirely – then it can be pronounced phonetically: Skryzlo. In fact, my uncle, who is a lawyer, changed his name from Skrzydlo to Skryzlo so judges would stop mispronouncing it. It's my dearest ambition to have a theorem or mathematical model named after me, just to make students learn how to pronounce it. Or maybe make a ton of money and donate it to UW to name a building after me... I hear Village 1 is still available...

## YCLEPED: WE'VE HEARD THAT mathNEWS PLAYED A ROLE IN YOUR LOVE LIFE. TELL US THE STORY =)

My husband used to write a column, "Snuggles Sez", and I was a proofreader. I had to fix his terrible grammar, and he would always carry those Halloween-size packs of mini fuzzy peaches in his pocket to production nights and give me one whenever I saw him. Turns out his long game paid off...

# WEAPONS OF MATH DESTRUCTION AND THE ETHICAL USE OF DATA

profTHOUGHTS 137.4

Algorithms are amazing. They can drive your car, suggest what someone might want to watch or buy, track down fraud, keep communications secure, or even predict where the next goose will attack, all with remarkable efficiency.

But an algorithm is only as good as the data it's trained on. If reality is biased, an algorithm trained on that reality will reflect existing inequalities, and worse: perpetuate them with that same remarkable efficiency. The best algorithms get feedback to improve—if a prediction is found to be incorrect, tweaks can be made or additional data included. But many algorithms are **BLACK BOXES**, and end up creating loops that reinforce their own biases rather than correcting them.

Imagine the city of Waterloo is trying to optimize where it sends its police officers to minimize violent crime. One possibility would be to look at data from where violent crimes were committed in the past, and spend more time in those areas. But violent crime is relatively rare, and a model based on that little data might have poor predictive power. So what if they also include data from non-violent, or “nuisance” crimes, such as loitering or bylaw violations? That will give a huge dataset, and would probably reveal more such crimes reported in student areas. So the city would have its police officers spend more time in student areas, where they would probably catch more nuisance crimes, simply by spending more time there. These reports would go back into the algorithm, telling them to spend even more time there, etc. The algorithm would look like a success by catching more “criminals” and validating the high crime areas, but would the city accomplish its goal of reducing violent crime? Probably not! All it would do is catch a lot of minor crimes, while discriminating against students.

Something very similar to this hypothetical example actually happened in many major US cities. Predictive policing algorithms, when fed with “nuisance” crime data, had police spending more and more time in poorer neighbourhoods, which were also highly correlated with racialized neighbourhoods. One result was that while marijuana use is almost equal between white and black teenagers, black teenagers were more than four times as likely to be arrested for possession. The police probably even thought they were being unbiased by “blindly” following the algorithm's recommendations. Unfortunately people believe that algorithms are inherently fair, but they're only as good as their inputs.

Consider another example: the credit score. This started out as a good kind of algorithm—the definition is relatively transparent, the things that help you improve your score (pay bills on time, stop ordering new credit cards, etc.) are actually related to your creditworthiness, and you are entitled to know your information and correct errors if any are found. Sadly, over time it became used as a proxy for things other than the ability to pay back loans.

Insurance companies realized that people with higher credit scores also tended to have fewer claims, and, surmising that people who were conscientious with their finances would be conscientious drivers as well, gave them discounts on car insurance. Employers, looking for a shortcut to screening employees, began using credit score to influence hiring decisions. The problem is that credit score is also a proxy for socio-economic status. This resulted in people who were poorer being charged more for insurance and being less likely to get hired, which in turn reinforced the cycle of poverty. The issue here is that using credit score as a proxy for things other than your ability to pay bills is invalid. Of course the wealthy are more able to pay back loans, but that doesn't actually make them better drivers or more valuable employees. At a certain point, using credit score in this way is just a flimsy excuse to discriminate against poor people. In Canada it is illegal to use credit score as a rating factor in insurance or for hiring decisions, but in the United States it is still used. Punishing those who can least afford it shouldn't be the goal of any financial system, but unless fairness is explicitly accounted for in the algorithms, bias creeps in. Our present society is biased and our systems should seek to correct this bias as opposed to reinforcing it.

Transparency in algorithms is important, but sometimes it can be a problem as well, opening up the door for people and institutions to game the system. This is readily apparent in university rankings. There are many lists of rankings for universities & colleges, both national and international, and they usually have fairly clear criteria. The problem is, a huge amount of time and effort (and money) is spent improving the factors that affect the ranking, but which may or may not have any bearing on actual quality of education. This is the invalid proxy problem cropping up again.

So what can you do? You will be working for companies who make these kinds of decisions one day. It's important to determine whether the data you're using is actually measuring what you want to measure, or is a proxy for something else. Ensure that feedback loops are corrective in nature as opposed to reinforcing bias. Think about whether all the data is actually relevant: sometimes leaving out certain data is the right thing to do. Occasionally it comes down to a moral issue, requiring balance between efficient algorithms and getting non-harmful effects. A small sacrifice in efficiency that prevents a feedback loop of unfairness is a sacrifice you should make.

For more information and lots more examples, please see the book “Weapons of Math Destruction” by Cathy O’Neil. She gave a fascinating talk and workshop at UW last term, and most of this article is based on her work.

Prof. Diana Skrzydlo

## profQUOTES 137.4

PLEASE SEND MORE, WE ARE STARVING...

CO 342: MARTIN PEI

“ You should never cheat. I'm the only one who can cheat.

ACTSC 372: HANY FAHMY

“ Let's not assume that you know anything.

STAT 230: KIM NAM-HWUI

“ Yeah, I was dumb. What the fuck? Alright, let's go; rock-paper-scissors.

MATH 135: IAN GOULDEN

“ I'm never going to create that because it's too difficult; I'll just give it to the students.

ECE 782: DANA KULIĆ

“ Any robotics class without a real robot is really a computer graphics class.

CS 241: TROY VASIGA

“ C++ is lung cancer.

CS 245: CARMEN BRUNI

“ I don't give out free blessings.

CS 350: LESLEY ISTEAD

“ I'm banned from Microsoft's info sessions.

R/UWATERLOO: LESLEY ISTEAD

“ Hahaha. The phrase "micro\$oft" was definitely involved... because "Microsoft" was a very bad word when I was younger.

“ Once upon a time, during my undergrad, I was a die-hard Linux supporter. I ran installfests, compiled & installed the OS from scratch, wrote drivers, installed it on PlayStations, etc.

“ My fellow CSclub members and several Mathsoc members did not think it was wise to send the obvious Linux zealot to m\$ events, so they "banned" me.

“ It wasn't an official ban, just a "we won't give you tickets, please don't go".

“ Of course, I am no longer a die-hard supporter of ANY operating system. EVERY OS is awful.

## QUOTES FROM SONG OF MYSELF BY WALT WHITMAN

Song of Myself is one of the most famous American poems ever written. For your consideration, I have selected several interesting quotes from it. I hope you learn something of poetry!

"I turn the bridegroom out of bed and stay with the bride myself,"

"I dilate you with tremendous breath, I buoy you up,"

"Copulation is no more rank to me than death is."

"If I worship one thing more than another it shall be the spread of my own body, or any part of it,"

"To die is different from what any one supposed, and luckier."

"The alligator in his tough pimples sleeps by the bayou,"

"I behold the picturesque giant and love him,"

"In vain the mastodon retreats beneath its own powder'd bones,"

"The dirt receding before my prophetic screams,"

"I believe the soggy clods shall become lovers and lamps,"

"And a mouse is miracle enough to stagger sextillions of infidels."

"If I worship one thing more than another it shall be the spread of my own body, or any part of it,"

"I do not trouble my spirit to vindicate itself or be understood, I see that the elementary laws never apologize,"

"Do not call the tortoise unworthy because she is not something else".

"The scent of these arm-pits aroma finer than prayer,"

Viceroy Butterfly



# THE MARKET DOES NOT SOLVE MOST THINGS BUT IT MIGHT GET THE DISHES DONE

Lately I've been thinking about how a bounty system for household chores could be implemented. In a very unfortunate turn of events though, all of my roommates are fairly tidy people and the overhead that setting this up would involve doesn't seem worth it in our household. But that didn't faze me too much. Things are much more fun on the theoretical level anyways. So consider the following system:

- Each chore is assigned to only one person. This means that only one person is in charge of washing the dishes, only one person is in charge of cleaning the toilets, and so on. They are given an allotted period of time to get these chores done. For example, even though toilets should be cleaned every week, we might consider giving the person 9 days to perform that task.
- Each chore has a monetary value assigned to it, something that's small but can add up over the course of a month. How much a chore is "worth" should depend on how complex it is (or how unpleasant it is found to be), and descriptions of what the task entails need to be made very clear. For example, would doing the dishes also involve wiping down the stove top and counters? These things need to be outlined fairly clearly. I'm thinking along the lines of \$3-8ish/chore, but also like a max payout of \$50ish/month, and I'm not sure that those things can both be a thing.
- After the original member's deadline for doing it passes, it is now up for grabs by other roommates. Completing the chore means that the chore's "owner" now owes you money.
- Credits and debits should be settled up on a fairly frequent basis, maybe monthly or biweekly.

If your chores are done on time, you don't lose money. If your chores aren't done on time, they would still get done in a reasonable amount of time. You can also do extra chores for beer money if your roommates aren't pulling their weight.

## LIMITATIONS

- I feel like this really only could be used in a really specific circumstance, that involves you being friendly enough with your roommates to trust them with money stuff, but not with doing the dishes on time. Perhaps the need for trust can be removed if at move-in you pay a deposit that gets deducted from whenever someone cashes out.
- I'm not sure the prices can be "fair" if there's some really different opinions on how "fun" a chore is.

Conversely, there might be a chore that no one wants to do, for any reasonable price.

- I can foresee a fair bit of "oops I did that chore but forgot to update the whiteboard" shenanigans. Updating a whiteboard is also mostly what I meant by overhead.

## FURTHER CONSIDERATIONS FOR NERDS

- How to actually arrive at the prices for all the chores—should there be a rigorous equation, or can they just be found by consensus?
- Obviously, there are ways that this system can be abused. One way of minimizing that might be to make sure that the total price of everyone's chores are within a few dollars of each other, but that would result in a more rigid system where prices can't be negotiated and re-negotiated as needed.
- Would you be in a better/less exploitable position if your assigned chores are cheap but frequent, or expensive but infrequent?
- With regard to dishes specifically: I feel like possibly a complicated setup or equation might be needed, because some loads of dishes are fairly light while others are heavy, and also stuff like amount of rotting food needs to be considered?
- Will this system actually get more chores done?

## SUDDENLY, COMMUNISM

Unfortunately, here's the thing: by giving traditionally unwaged work a monetary value, we fail to challenge (and in fact play right into!) the legitimization of paid work.

Housework is probably the only good type of work in the world—it's work that you do for your own mental health, for your own satisfaction. You're not exploiting anyone or being exploited.

Waged work, on the other hand, has traditionally been awful. It's as much a social convention, disciplinary apparatus, and oppressor of the people as it is an economic necessity, and as technology advances and automation takes over more, this is only going to get more true. Ask yourself this: why hasn't the work day shrunk with the advancement of technology, especially considering that wages have basically stagnated since the 80s while the cost of living grew?

It's already difficult to see the nuances in the politics of work, is it worth it to muddle it some more with paid housework? More years of false consciousness?? How about, no thanks.

Also consider: the capitalism of the 50s that provided family wages and the possibility of retirement at 60 is the same beast that is rapidly removing environmental legislation and worker protections today, it just hadn't reached its final form then. (A spooky thought: this still might not be its final form.)

So even though the system that I proposed has, as of now, no exploitation of individuals, can I really be certain that that would hold for long? No, no I can't.

On the other hand, it is pretty annoying to have dishes all over the place all the time. Would it be worth it, dear reader? The choice is up to you.

### *IHaveNothingToLoseButMyChains- ButAlsoMyReallyCleanApartment*

P.S. If you actually end up implementing this system please let mathNEWS know how it turned out!!!! I will be very interested in seeing it :^

## NATURAL NUMBERS FROM 1-9, RANKED OBJECTIVELY FROM BEST TO WORST

1. 9. Nine is a beautiful number, in both its structure and its properties. It has a shapely enclosed area and a small branch that reaches out, meaning it safely holds its secrets while still making sure to explore the outside world. Nine is also the basis of many fun math tricks. If you multiply 9 by any number from 1-9 then add up the digits, you'll get 9! Similarly, adding up the digits of any multiple of 9 will net you a multiple of nine. It's just that simple! Everything comes back to nine. This can be seen in even this list, which has nine entries.
2. 8. Eight is a mysterious number that keeps much of its depths to itself, within its bipartite body. When flipped on its side, it curiously resembles the infinity sign. It is also the cube of 2. Does it deserve this high a spot on this list? We don't know for sure. Is it high up on this list regardless? Yes. Belief in the number eight is akin to belief in infinity, or belief in God. Fullness lies within it, even as chopping it in two will reduce it to nothingness.
3. 3. Three is a number wrought with symbolism. So many things come in threes. Trios, triplets, triangles, threesomes, triumvirates, tricycles, trilby hats, trimmings, tricks, trills, trivia, the list goes on. Curiously, 3 times 3 is equal to 9, which is the objective best number from 1-9. Some may call it nepotism, but sometimes numbers are deserving of their fame independent of their associations.
4. 6. Six is, indubitably, a perfect number. It is the smallest number whose distinct positive divisors (excluding itself) add up to itself. For six, this means  $1+2+3=6$ . It also happens to be the same shape as 9, except upside-down. Everything comes back to 9; 9 is truly the best number, even if it's not technically a perfect number.
5. 7. Seven is a classic "lucky number", and is held in high esteem by many. However, much of that praise is based on pure speculation, and schemers have even managed to capitalise on the love for seven. With products and establishments like Lotto Super 7, Super 7 Inn, and more, the meaning of 7 has been co-opted by ne'er-do-wells and wrested away from the hopeful public it was meant to serve.
6. 5. Five marks the middle of the digits from 1-9. It is formed in quite an enigmatic way, with both straight line segments and a satisfying curve. It is also a number that works extremely well with base ten, as ten is divisible by both 5 and 2. I was originally going to put five higher up in the list, but then I realised that it's the most centrist number. Five wouldn't even vote for itself because it deems itself too "apolitical". It would tell marginalised numbers that there's nothing wrong with the current state of number affairs, and offer no meaningful change either way. Five is not your friend.
7. 2. Two is the basis for binary, our trusty pal in data storage. I must say, though, it's not a very nice number to write. Twos always feel either unbalanced and cramped or overly gaudy. They only look acceptable if significant time is spent on perfecting their form, and by that point you've already reached the realization that they're not that great. Sorry, two, but you'll have to sit down.
8. 1. One is the successor of zero, and the most basic counting unit. Unfortunately, that also makes it a very basic number. It is a number oft confused with the lowercase letter "l", the capital letter "I", and the vertical bar (|) used for absolute values. Honey, trying to go multidisciplinary isn't winning you any favours. Stick to what you're best at, math.
9. 4. Four is a homonym for death in many Asian languages, and can also be quite ugly if written with a disjointed top. When a number can't decide on whether to spill secrets or to keep its mouth shut, that's a good reason not to trust that number. Four is a snake, everyone! What a square. Everyone knows even numbers are boring, and it was just four's luck to be boring AND unscrupulous. Looks like it's the bottom of the list for you!

# ODE TO THE UNIVERSE

## AN EXISTENTIAL MONOLOGUE ON WHAT IT MEANS TO MEAN

Who is what.  
Where is why.  
When is now.  
Now is where?  
What is "where"?  
When is what?  
What are we?  
Are we how?  
Why are we even here?

Grab a pickle.  
Eat the pickle.  
**Taste** the pickle.  
Do you taste the pickle?  
No. You taste vinegar.  
There's a cucumber in there too,  
But now it's a pickle.  
How?  
Why is it a pickle, and not a pickled cucumber?

I'm on fire.  
No I'm not!  
Or maybe I am.  
I can't tell.  
I'm asleep.  
But I'm not.  
So maybe I am.  
What am I, though?  
Who can really know?

I'm broken.  
Malfunctioning.  
Words come.  
Words go.  
They don't make sense.  
You'll try to make them make sense.  
They don't make sense.  
I don't make sense.  
I'm asleep. I can't make sense.

The pickle is a maybe.  
Am I a maybe?  
I'm a maybe.  
Maybe here.  
Maybe there.  
Maybe never.  
Maybe everywhere.  
Maybe makes sense.  
MAYBE.

You're still here.  
I see you!  
No I don't.  
This is a word.  
Words don't have eyes.  
They have "i"s.  
They sound the same.

They are different.  
Are they?

Strawberry marmalade.  
I miss it.  
Which is strange,  
Because it's not real.  
I miss it so much.  
Why did it go away?  
It was never here.  
It could never leave.  
Why did it go away?

Lemonade, lemonade,  
Lemonade.  
The world is made from lemonade.  
I want it.  
I need it.  
I don't have it.  
It is sour.  
But sweet!  
I am not thirsty.

What is a pant?  
Breathing is hard.  
In one nostril,  
Out the other.  
How do I pant?  
Do I wear pants?  
Or am I a trouser?  
How many pants do I wear?  
Two? Four? Seven? Nine?

~~A Broth-Boiled Warrior~~  
A Dreamer in Delirium

"I am the egg man..."

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## A mathNEWS HAIKU

A mathNEWS haiku  
Write seventeen syllables  
To get free pizza

Zaddy<sup>2</sup>

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## A SECOND HAIKU

A second haiku  
Because apparently one  
Is "too little work"

Zaddy<sup>2</sup>



# NATURAL NUMBERS FROM 10-19, RANKED SUBJECTIVELY FROM WORST TO BEST

*BECAUSE ONLY A SITH DEALS IN OBJECTIVITY*

1. 14: Just gives me bad vibes, you know?
2. 19: What I got on my last midterm :(
3. 10: Easy math is lame, irrational base systems are where it's at.
4. 18: I kind of just... forget it exists half the time.
5. 11: So boring. Just two lines. That's it? That's really the best you can do?
6. 16: Hexadecimal jokes are chuckle worthy at best. Nothing else of significance is associated with 16.
7. 17: Kind of cool, but a 17-year old looked at me weird once.
8. 15: I finally graduated high school in 2015.
9. 12: Did you know a dozen dozens is called a gross?
- 10.13: Luck is just bourgeois propaganda, 13 is the bestest number there ever was.

SIGSEGV

## TIPS ON BEING UNPRODUCTIVE

- Don't even bother checking your assignment due dates.
- Agree to go on any "summer adventure" trip any of your friends propose!
- Instead of working, maybe take a nice nap?
- Give yourself a pass on being productive after 11PM, because that's basically sleep time anyway.
- If you agreed to get groceries with your roommate at 1PM, don't bother getting any work started before: you'll just have to stop it anyway, there's no use getting into something you can't finish.
- Open up an idle game in another tab. It's just an idle game so it surely won't take up too much of your attention.
- Write articles for **mathNEWS**.

Diminutive Rex

## FEAR OF MISSING OUT

Fear of missing out has plagued me all through university. I'm afraid that if I say no to any invitation from any of my friends they'll decide "well, that's it, that's done, we're giving up on inviting her to anything anymore". I'm afraid that if I don't seize all the opportunities presented to me, then the opportunities will dry up and I'll fiercely regret not jumping on every chance I saw.

It feels precarious. If I hadn't happened to see that one poster, go to that one event, chat with that one person, I wouldn't have many of the people or experiences that fill my life. I'm following a path that I'm constructing while I'm walking it, and I don't have any breathing room to step back and just enjoy the journey.

But I think it might be a self-fulfilling prophecy. I never get to see what would have happened if I'd passed up on the opportunities, so I don't get to see that other good things would have presented themselves in time.

I overwork myself sometimes, trying to keep up with the hectic pace I set for myself. It's hard to give myself permission to take a break, but I need to figure out how to do that.

If you're having the same problem as me, I want you to know that it's okay for you to take a break too.

Diminutive Rex

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UW'S BASTION OF ERUDITE THOUGHT SINCE 1973

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

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# gridCOMMENT SHOULD BE A TEAM SPORT

There is officially a streak in the making. For the second issue in a row, "Joseph" is the winner of the **gridWORD!** Joseph you can come by the **mathNEWS** office (MC 3030) to claim your prize.

There were multiple submissions again this time around, but only Joseph's submission was 100% correct. Second place was a two-way tie between B-train and e, with one error apiece. To wit: 53-down "Las Vegas alternative, drunkenly" was OENR, which is an anagram of RENO. Of course, this isn't a cryptic crossword, but perhaps I should have mentioned that the occasional cryptic clue might be peppered in here and there (hence forewarned!)

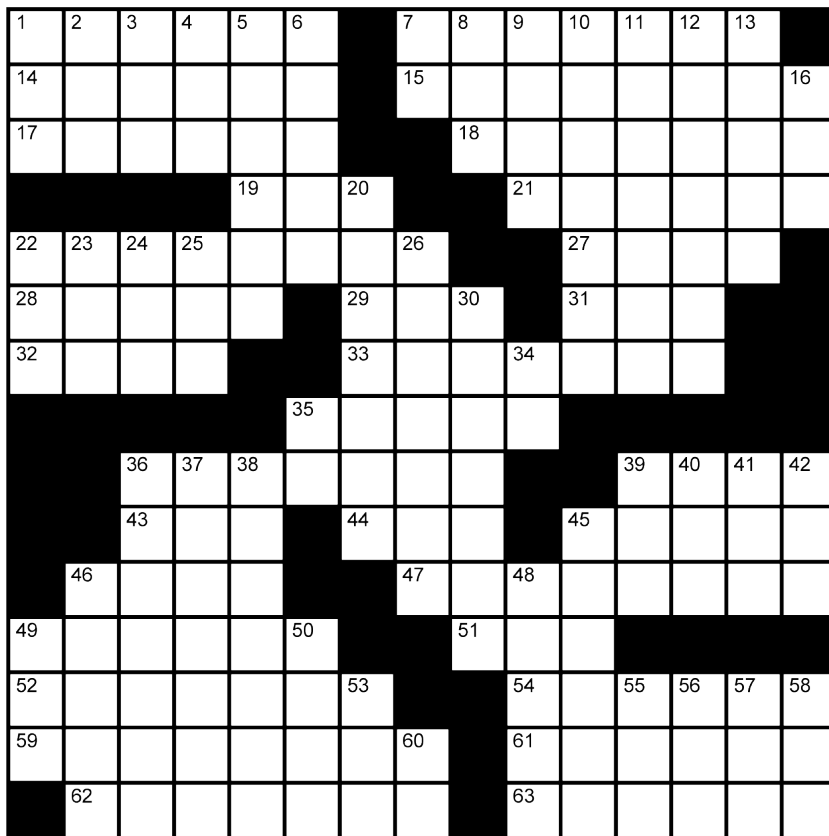
The theme last time, for those who are interested, was a map of UW campus. If you look at the solution on the next page, you'll see campus locations in the puzzle, in rough correspondence

with their geographic placement. Some of them are split onto two lines (DORMI/TORIES, for example).

This week's theme is a Canada Day special. The theme clues are typeset in parentheses and all caps (LIKE THIS). The answers are a set of Canadian institutions. The relationship between the clues and answers is for you to figure out... it's not too hard ;).

This week's **gridQUESTION:** What's your favourite illegal activity? Submissions are due by 6pm on Monday, July 9<sup>th</sup>, either in the **BLACK BOX** next to the Math C&D, or via e-mail to [mathnews@gmail.com](mailto:mathnews@gmail.com). Friendly reminder: you can also use either of the above methods to submit **profQUOTES**.

Happy Canada Day long weekend!  
yclePED



## ACROSS

- 1. (REDMEN)
- 7. (MUSTANGS)
- 14. Lack of vigor
- 15. Make (something) certain to happen
- 17. With "Systems", a branch of engineering
- 18. African pullover
- 19. Teacher's credential (alt. form)
- 21. (AXEMEN)
- 22. (WARRIORS)
- 27. Aleutian island
- 28.  $\pi r^2$ ,  $1/2bh$ , etc.
- 29. A superset of ASCII
- 31. Born, in bios

- 32. What you want to be when waiting for a CS advisor
- 33. (DINOS)
- 35. Caste system in the Indian state of Kerala
- 36. "Everyone gets a scramble"
- 39. Steven Universe resurrectee
- 43. What you might say when you finally understand a difficult proof
- 44. NHLer Crosby
- 45. Guinness adjective
- 46. French toast
- 47. (RAVENS)
- 49. (GAELS)
- 51. "\_\_\_ rang?"
- 52. What Marcel Marceau might (not) say

- 54. Show to the door
- 59. "Whoa that's fast!"
- 61. La-di-da
- 62. (RAMS)
- 63. Top stories

## DOWN

- 1. "Spy vs. Spy" magazine
- 2. August event in Toronto
- 3. Some appliances
- 4. 1, 1000, 1
- 5. Feline hybrids
- 6. 50 & 50
- 7. Perth state
- 8. Electrostatic discharge, for short
- 9. Supersampling anti-aliasing, for short
- 10. An Orlando resort
- 11. Medical crisis misanthropist
- 12. Lesser member of a famous Florida group
- 13. Maker of history's most durable cell phone
- 16. Swedish parcheesi
- 20. Fancy yarns (Fr.)
- 22. Sickly
- 23. Make, in arithmetic
- 24. Okla. neighbor
- 25. "Have some"
- 26. Earache remedy
- 30. In Canada, February 15<sup>th</sup>
- 34. Chevy, Cadillac, Buick, ...
- 35. cm alternative
- 36. Solving a quadratic equation, for most Waterloo math students
- 37. Vocative address to the people of an Arizona city
- 38. More grumbly
- 39. Whopper
- 40. Oils and such
- 41. Richie Sambora's side project
- 42. RR stop
- 45. Smooth
- 46. Buzz
- 48. Indonesian pop star
- 49. Vital life forces
- 50. Startups, usually
- 53. Tokyo, once
- 55. Party in April, August or December
- 56. \_\_\_-Wan Kenobi
- 57. (THUNDERBIRDS)
- 58. Answers to "Pls"
- 60. All the possible answers to a decision problem

## GLORIOUS STRUGGLE AGAINST ANTI-PUZZLERS CONTINUES!

Dearest puzzle**SOLVERS**,

This is your puzzle**MASTER** speaking. You may have noticed that last week's issue contained a Masyu puzzle, indeed, as the fire of puzzle revolution will never burn out. But it lacked a title! This was of course, the work of devious counter**REVOLUTIONARIES** working against my acts as puzzle**MASTER**, and not because I forgot to write a title and nobody asked me.

How do you resist these counter**REVOLUTIONARIES**, dearest puzzle**SOLVER**? By forcing your friends to do the Masyu puzzles! Then come to production night and write about how much you love them! Do it!

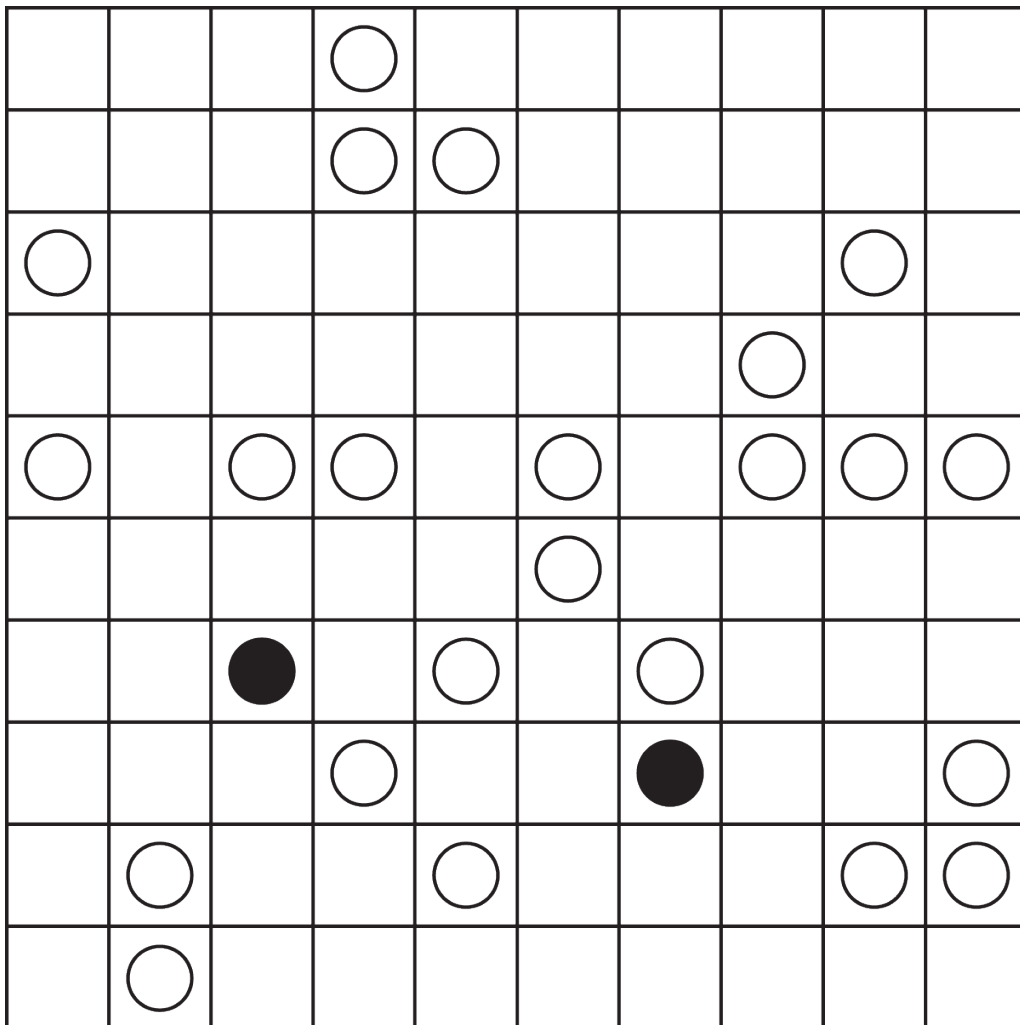
Let us recap the unwavering doctrine of Masyu: the goal is to draw a single, unbroken loop from box to box, which never crosses over itself. Squares with black circles indicate corners, and the loop must make a turn in the square, AND in each of the squares where the loop extends from the black circle,

it may not make a turn. Squares with white circles indicate straights, and the loop may not make a turn in the square with the white circle. Furthermore, the loop must turn in one, or both, of the squares where the loop extends from the white circle.

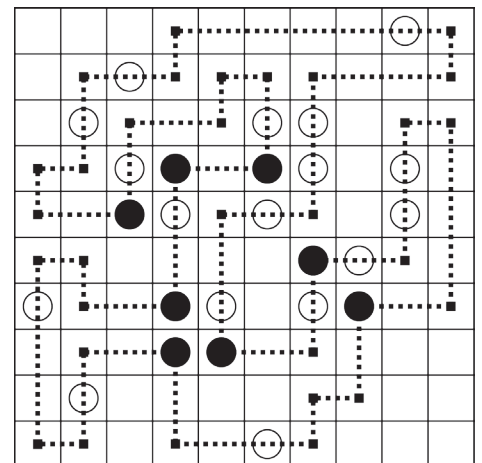
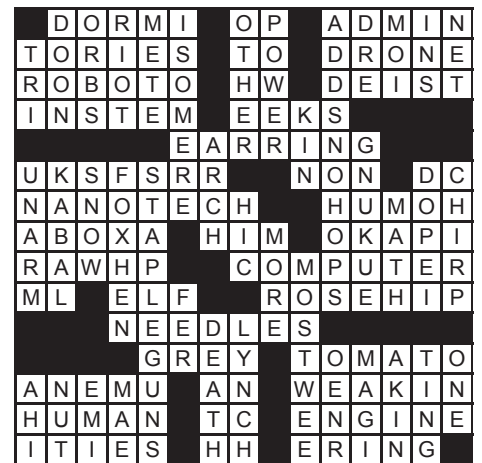
This week's puzzle is tricky as always! Last week focused on the black circles, and you may have realized that from the bunch of three black circles, you can derive that the spokes must extend down and left from the bottom left, and therefore, up and right from the upper and rightmost black circles in that bundle respectively. However, this week's puzzle will test you on your skill with the white circles! Remember the rules — when the line passes straight through a white circle, it must turn in one of the adjacent spaces! So what does that mean about lines of three white circles...?

good**LUCK!**

the puzzle**MASTER**



### LAST WEEK'S SOLUTIONS



# LookAHEAD

SUN JULY 1

Canada Day 🍁

MON JULY 2

Canada Day (University holiday), no classes

TUE JULY 3

Party with Profs (4-7PM, Bombshelter Pub)

WED JULY 4

Independence day  
First day of continuous round co-op interviews

THU JULY 5

Continuous rankings open at 8PM

FRI JULY 6

SAT JULY 7

SUN JULY 8

Orangemen's Day (Newfoundland and Labrador)  
Nunavut Day (Nunavut)

MON JULY 9

Elliptical Pool Table Reveal (11AM-1PM, MC Comfy)

WED JULY 11

Drop penalty 1 period ends

THU JULY 12

Drop penalty 2 period begins (WF assigned, no credit granted and grade of 32 applied)

FRI JULY 13

SAT JULY 14

## mathSOC SEZ

Hello Mathies!

**mathSOC** will be holding two very special events in the next two weeks!

**Party with Profs** will be happening on July 3<sup>rd</sup> from 4-7PM at the Bombshelter Pub. Free food will be available (including vegetarian options)! Come socialize with some of your professors! Make sure to bring your ID and Watcard.

Join the Dean of Math and **mathSOC** on July 10<sup>th</sup> at 11AM to 1PM for the **Elliptical Pool Table reveal!** Drop by the MC Comfy Lounge and play a few games of elliptical pool. There be free ice cream and cupcakes!

Want to find out more about **mathSOC**? Check out our Facebook page at <https://www.facebook.com/mathsoc/>! We have a lot more events planned for July!

Alex Lee  
**mathSOC** Council  
Math/Business Class Representative

## GREETINGS FROM ABOUT 800 BC

Regular readers of this paper may have wondered where I have buggered off to after handing over the **gridWORD** to yclepED (note: we met during disorg), and I spent the time going on vacation in sunny Mesopotamia in 800 BC, thanks to the time machine of [REDACTED] that I borrowed for the occasion. Understandably, since I don't have access to the Internet, I had to brush up on my Akkadian, although I probably should have also studied Sumerian.

Well, "spent" isn't entirely accurate. I wrote this while I was still in 𐎶𐎵𐎠𐎺 and assuming my sleeper agent activated my mailer daemon at the right time, you should be reading this in v137i2. If not, uh, I probably accidentally changed the timeline somehow somewhere, but it's not like **you'd** know, since from your perspective it's always been like that. Time travel is weird like that. Hey, maybe when I get back I wouldn't have to worry about Soviet missile strikes and the endless draconic conspiracy meetings about them.

Anyway, hope everything is going alright back there (ahead then?), and try not to die before your midterms, m'kay?

Zethar