

SUMMER SEASON\* EDITION



\*SPELT THE WAY IMPRINT SPELLS IT

## LOOKAHEAD

---

### mathNEWS

---

June 10	Issue 3 is used as a wig
June 20	<i>mathNEWS</i> builds a wall around its writers out of pizza
June 24	Issue 4 makes <i>mathNEWS</i> great again

---

### MathSoc

---

June 16, 23	Games Nights
-------------	--------------

---

### University

---

June 8	Final exam schedule posted
June 17	Deadline for 50% tuition refund

---

### Miscellaneous

---

June 12	Shavuot
June 18	National Sushi Day, National Panic Day
June 19	Father's Day
June 20	Summer Solstice
June 21	National Aboriginal Day

## VPA SEZ

Hello mathies,

I never formally introduced myself in *mathNEWS*. My name is Tristan and I am the Vice President, Academic for this term. As VPA I represent math students to the administration of the University of Waterloo. This includes representing all students through my advocacy

efforts, as well as supporting individual students in their interactions with the administration.

Some of my projects this term include:

- More textbooks for the textbook library (Profs. if you have old textbooks, we want them!)
- Having course syllabus' posted outside of Learn
- Re-designing the PD1 Resume to be usable outside of PD1
- Expanding the exam bank (Profs. if you have an old midterm or exam, we want them!)

If you have any ideas or issues that you think I should be working on, advocacy projects you want help with, or assistance with something bureaucratic at the university, feel free to contact me! My email is [vpa@mathsoc.uwaterloo.ca](mailto:vpa@mathsoc.uwaterloo.ca) and my office hours are usually TTh 11:30 AM - 1:00 PM. Thanks!

*Tristan Potter*

*Vice President, Academic*

## MASTHEAD

This week was marked by the lack of attendance at production night, presumably as a result of midterms. Aside from that, this week, we had the following question for our writers. "What do you do to distract yourself from the shitstorm that is american politics?"

Beyond Meta("I am busy enough dealing with the shitstorm that is my personal life"); Shay Blair("Plans to set the whole USA on fire using a storm of fiery shit"); Dusk Eagle("Try and write for *mathNEWS* and fail"); Diminutive Rex("#ELBOWGATE"); Socoess("Read about ontario politics, where the real decisions are made"); VPAwesome("The wonderful world of student politics.");

me("I use american politics to distract myself from the shitstorm that is /r/uwaterloo and youtube drama."); bunnyED("Watch videos of bunnies eating raspberries."); Element("Put shit in a blender with the top off, place it on the porch, ring the doorbell..."); kartoffel("By being Trump, I eliminate the need to care about american politics"); Scythe Marshall("Work on my Ph.D. in Mathematics. Though sometimes this doesn't really work..."); *quizED("What's 'american politics?")*

## HOW TO COLLECT PROFQUOTES

Guys, collect *profQUOTES*. I mean, seriously, I was disappointed to see that I was the only one who submitted any in the last two issues, complete with a special mention.

Collecting *profQUOTES* is really easy. Just follow these four simple steps:

- Go to class.
- Listen to your prof.
- Write down anything your prof says that's funny, weird, inspiring, etc.
- Send them to [mathnews@gmail.com](mailto:mathnews@gmail.com) or drop them off in the **BLACK BOX** outside of the Math Comfy Lounge.

The course doesn't even have to be in the math faculty. People have sent in quotes from their PHYS, CHEM, and even JAPAN courses.

Even if your prof doesn't say anything worthy of a *profQUOTES* during a lecture, your grades will probably be that much better because you went to class, so go out there and collect those *profQUOTES*!

*AltGr*

## WHAT KIND OF SOCKS SHOULD YOU WEAR?

- Black: Great for formal occasions. You can wear them almost all the time, since we know black-socks never get dirty; the more you wear them, the stronger they get.
- Multi-coloured formal: Great for showing you have personality!
- Ankle length: Great with running shoes for sports.
- Mid length: What you should wear most of the time.
- Knee length: Great for golf or soccer.
- Argyle: Great to wear with a suit or casually. They look awesome for everyday wear.
- Sports and Athletic Performance: Wear them to play sports, they're fun!
- Patterns: Great look. Lots of fun.
- White socks: Not for interviews, and especially not with a suit or formal dress. (I'm looking at you quizED.)

*secret to success*

## SHOULD WE HAVE ANY MORE FREE FOOD EVENTS?

Whenever I see our university tuition listed on Quest for the Mathematics Endowment Fund or the Federation of Students fee or any university government fee that allocates resources to free food events, I get extremely upset. I want our university to rank higher in the world, and that means dedicating money into research and development.

I was an orientation leader for the 2015/2016 year, and the amount of food we threw away at the end was insane. Instead wasting our resources, maybe that money could have been dedicated to fixing the million-year-old MC washrooms, if not towards educational-related ventures? I mean, if the food is gone within minutes, such as during the infamous pies during Pie Day, that's not so bad. Just wasting our money gets me mad!

Ultimately though, the goal of being in university is to *learn*. If you want food, go buy whatever you like! Even if not spent on free food, just the pure amount of wasteful ventures our tuition money goes into disgusts me. What do you guys think? Shouldn't UWaterloo start budgeting their spending more carefully?

*an angry UW student*

## GOOD STANDING

Out of the quiz that savaged me,  
Awake only due to coffee and nerve,  
I beg the gods up in MC,  
For my salvation in the curve.

In the throes of midterm week,  
Awash with assignments, yet I don't drown -  
Though I may seem to be up shit creek,  
My average has faltered but not gone down.

Beyond this cycle of homework and tears,  
Looms but the horrors of a co-op job.  
And yet, each new influx of first years  
Will not so much as see me sob.

It matters not how hard the course.  
How far, through learn, you have to scroll.  
I'll get through this, by will, or force.  
I'll graduate, for that's the goal.

*Diminutive Rex*

## AN APPLICATION OF POETRY TO GROUP THEORY

DEDICATED TO NIELS ABEL

*Commutative* Abelian Group

It's truly rare that you're a simple group,  
And being finite, only slightly less;  
Your structure is obtained in one fell swoop,  
If only generators aren't a mess.

The integers are principal, of course,  
And you're a mod'ule in the ob'vious way;  
Apply the theorem! Just a tour de force,  
The information elements betray.

And Pontryagin knew he'd got it right  
When characters did form a group themselves;  
The implications soon did shine forth bright:  
Analysis had books ripped off the shelves.

You're at the center of each group, you know,  
So find some action everywhere you go!

*Scythe Marshall*

## AN APPLICATION OF GROUP THEORY TO POETRY

I've spent a non-trivial amount of time writing poetry over the last two years. So it makes sense that eventually, I'd manage to find mathematics in the poetry (as opposed to *putting* mathematics in the poetry; that happened pretty quickly). In case you've never written a line of verse before, or you've managed to forget everything from your language classes (for shame!), let's start with the basics. Poems can have a *form*. This is a set of rules outlining how a particular poem should be constructed. For example, a *Shakespearean* sonnet is a poem with the following form:

- Each line is in *iambic pentameter*, which means there are five *iamb*s (metrical 'feet', containing two syllables in an unstressed-stressed pattern);
- There are four *stanzas*: three *quatrains* (stanzas with four lines), and a *couplet* (a stanza with two lines);
- There is a *rhyme scheme*: abab cdcd efef gg, where each letter indicates a different rhyme.

Within the form, poets are allowed to use other poetic devices, such as alliteration (repeated sounds to begin words), metaphors, wordplay, and so on. Some forms are more restrictive; some forms are less so. *Free verse* is where you can do whatever you want; there is no form (I refuse to enter into the argument that "lack of a form" is itself a form).

There are many, many forms already utilized by poets around the world. Some famous ones include the *haiku*, the *sonnet*, the *limerick*, and the *acrostic*, just to name a few. Today, we're going to talk about how mathematics

can help you come up with your own forms and variations thereof, using the *sestina* as an example.

The *sestina* is a somewhat complicated form, upon first glance. It is a 39-line poem, split up into six stanzas of six lines each (called *sestets*) and a concluding *triplet*. First, you pick six words; these will be the ending words of each of the lines in the *sestets*. Denoting by the letters A through F the line ending with each word, the stanzas use lines with fixed end words in the following order:

ABCDEF

FAEBDC

CFDABE

ECBFAD

DEACFB

BDFECA

Then the last stanza uses the end words for line types A and B in the first line, C and D in the second line, and E and F in the third line to finish. This seems kind of random, but when you spend a moment or two thinking about it (or just start trying to write a *sestina*), there's a pattern which shows up. For instance, the end word of the last line of a stanza is the end word for the first line of the following stanza, and the end word for the first line of a stanza becomes the end word for the second line of the following stanza.

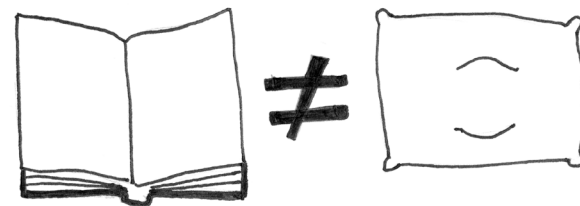
You might be thinking, having been primed by the title of this article, that "there's a cycle there!" And you would be absolutely correct! In cycle notation, this poem is 'generated' by the cycle  $(1\ 2\ 4\ 5\ 3\ 6)$ , in the sense that the line types are shuffled around between stanzas using this cycle. The line type appearing as the last line of a stanza becomes the line type for the first line of the next

stanza, and so on. The cycle has order six, and so there are six stanzas. The concluding triplet is a condensed stanza which features the end words in, you guessed it, the identity permutation again.

This type of form seems to generalize quite nicely. Pick  $n$  words which will become end words for lines, pick your favourite element  $s$  of  $S_n$  (the permutation group on  $n$  elements), let  $o(s)$  be the order of  $s$ , and write  $o(s)$  stanzas, each with  $n$  lines, where the line types are arranged according to the elements  $e, s, s^2, \dots, s^{(o(s)-1)}$ . Finish off, if you should desire, with a concluding stanza with  $n/2$  lines. (Yes, not  $\text{floor}(n/2)$ ; you can have a half-line if you want, for odd  $n$ !)

Clearly, you don't have to do that, precisely. Instead of end words, you could pick a rhyming scheme, and you can vary the number of lines per stanza, etc. Poetry is all about creativity and expressiveness. It might seem that forms act to limit these qualities, but imposing a form gives a poet a structure on which to build, and within which to create. Using patterns to build forms is then another way to be creative; in this case, we are using mathematics to do it for us. Some might claim that's not being creative; the rest of us will happily compose our verse while ignoring the creativity police.

*Scythe Marshall*



## SIGNIFICANT SPEECH SURROUNDING SPECIFYING SAMPLE SIZE

The Bomber has decided it needs a claim to fame. Imprint called it "Waterloo's largest outdoor patio", while the sign outside Bomber simply said "largest outdoor patio". This causes a great deal of confusion.

What is the sample size? Based on what Imprint claims, is it the largest patio in the University of Waterloo or the city of Waterloo? Based on the sign outside SLC, is it the largest patio in UW? KW? Canada? The Milky Way? Or just the largest patio from the sample set of places-named-Bomber-inside-SLC?

*Yours in demanding more information,  
Shay Blair*

## HOT FOR LINNAEUS

If your idea of fun is researching units of measure on Wikipedia (and honestly, isn't that everyone's?), then you might have noticed something weird about the temperature scales. Specifically, the Delisle scale. Specifically, that it's fucking backwards.

Why the hell would you think it's reasonable to have water boil at 0, and freeze at 150? I thought it might have been understandable, because maybe absolute zero hadn't been conceived of yet, but that turned out to be wrong, because some Irish guy thought it up like sixty years earlier. Not only that, some French guy came up with a reasonable approximation of it thirty years earlier! I realize information traveled slowly in the 1700's, but come on - do your research.

Then I dug a little further, and found something horrifying: the Celsius scale used to be backwards too. What the hell? Apparently the first temperature scale in the right direction was Fahrenheit, which has a whole bunch of other problems, like 0 being set as the coldest temperature measured in the winter of 1709 in Danzig, Germany (true story).

Don't worry though, there's a stupider forwards scale than Fahrenheit, and it was invented by none other than the great Isaac Newton. Guess being a genius doesn't mean you're good at everything, because his rigorous scale included some measures such as "2-4: the heats of air in spring and autumn" and "14: the greatest heat of a bath which one can endure for some time when the hand is dipped in and is kept in constant movement". Good to know the numerical temperature at which I should expect reactions to occur directly depends on how much discomfort I'm willing to subject myself to, I guess?

Side note, Newton also came up with another dumb scale that he also called the Newton scale because he was bad at names. In this scale, 1 is average body temperature, 2 is where wax melts, and 5 is iron glowing as brightly as possible. To compare this to Celsius, 1 is 37 °C, 2 corresponds to less than 100 °C, and 5 is 1538 °C. How is this useful?! I mean, I get wanting to use a geometric scale instead of a linear one for whatever reason, but did you really have to use the smallest numbers possible? In this scale, the centre of the sun would be about 11 °N. The number of significant digits you would have to use to make anything worthwhile is frankly stupid. (I mean, if you want to go full stupid with significant digits, you might as well go with the Planck scale, where

0 is absolute zero, and 1 is the hottest you can get before our fundamental understanding of the universe breaks down. I can respect the insane overkill of that.)

So how did we get our sane temperature scale from this collection of either ass-backwards or arbitrary as hell scales? Turns out, the year after Celsius died, his buddy Linnaeus quietly switched the direction of the scale so it wasn't stupid any more.

Linnaeus is the real hero. He saved humanity from terrible temperature scales and didn't even try to rename it after himself. He's the sort of friend we all should be so lucky as to have. Although to be fair, according to algorithmic analysis of Wikipedia, due to his work in biology, Carl Linnaeus is literally the most influential human in history, above Jesus, Hitler, Caesar and, well, everyone else. I guess when you have that going for you, you can let your friend be the namesake of the most commonly used temperature scale in the world. It ain't no thang.

*Diminutive Rex*

## N THINGS I KNOW ABOUT OVERWATCH THROUGH OSMOSIS

I don't play shooters, but I have been tempted to play Overwatch based on the things I've heard from friends. Here are some things I've heard about it that may or may not be accurate:

- All of the female characters are gay.
- D.Va is everyone's gay daughter. She is also giant gaming memer who subsists on Mountain Dew and Doritos.
- The Reaper is a dork pretending to be badass.

*k!*

## HORRORSCOPES

**ActSci:** Taking an extra term to finish school was the best advice you ever got. Since you did so well on your last exam, you figure studying is unnecessary. Your lucky number is: 2 extra terms.

**AHS:** You try to find your horoscope but the newspapers have discontinued their witchcraft sections. Instead, you stumble upon these horrorSCOPES. Creepy, right? Your lucky number is: 1 warning to not look behind you right now.

**AMATH:** With one foot in the realm of mathematics and one in reality, your future is murky and unclear. One thing is certain. You should stop taking CS courses with partnered projects. Your unlucky number is: \$20,000 for a mob hit.

**Arts:** To show off how arts is the largest faculty on campus, you stage a walk-through of the entire campus. You walk in single file through every single building to demonstrate a sense of scale. The line remains unbroken but somehow 5000 students disappear in PAS. Your unlucky number is: 2nd largest faculty on campus.

**Bioinformatics:** You find summer term too lonely so you develop a genetic algorithm to determine when the best terms to attend school are. Your lucky number is: 20 years until results, just in time for your firstborn.

**C&O:** You optimize your summer plans for maximum outdoors and sunshine. C&O summer courses are a

breeze, so the plan is working great. Your unlucky number is: only 50 days of sunshine--- should have factored in Waterloo weather.

**CS:** As usual, you have a million jobs to apply to and only one month to do it. Luckily, it's the same Jobmine you have known and trusted since starting school in 2007. Your unlucky number is: 9 years of promised replacement.

**Double Degree:** The summer bus schedule is killing your ability to attend classes at both universities. You reorganize your schedule to only have classes at one university each day. Your unlucky number is: 3 days a week at the Stratford campus. At least the shows are cheap.

**ENG:** You pick up a copy of mathNEWS for some misguided reason and read the horrorSCOPES to see what evil fortune the Math students have for you, their engineering rivals. Your lucky number is: 0 accurate predictions, unlike your midterm study plan.

**ENV:** You find the lack of geese disturbing. Concerned about the local environment, you and a couple friends sign up to collect data for a study. You find a lot of feathers but can't find your friends at the end of the day. Your unlucky number: 5 less gymbros.

**MathPhys:** Math is too hard and physics is too easy. You search for a better balance and find yourself 100 hours into Kerbal Space Program. Your lucky number is: 1 dead Kerbal per flight.

**PMATH:** Since it's still winter outside you don't feel like going home for a shower. You head over to M3 instead, only to find that it is locked earlier than usual. Unfazed, you simply shower at the PAC, noting the unseasonably warm weather along the way. Perhaps it's that global warming people have been going on about. Your unlucky number is: 2 more conjectures to prove.

**SoftEng:** The Viagra jokes from the various HardEng are getting out of hand and you all begin scheming ways to sabotage their 4th year design projects. Your year decides to not group with any HardEng students. Your lucky number is: 30 software startups not needing PCBs.

**Stats:** You decide to do a statistical analysis of the weather this year to predict if your garden will bear fruit. You enlist some ENV students to gather ground samples from various parts of campus. The project is cut short after several students go missing. Your lucky number is: 3 very well fed carnivorous Tomatalids.

**Teaching:** You refer all your students to Khan Academy because the school cut your funding for advanced lessons. Your lucky number is: 4 fewer kids in the classroom.

**Undecided:** You remain undecided. Your unlucky number is: 1 accurate prediction.

**GET OVER HERE AND WRITE SEZZES. YEAH, I'M TALKING TO YOU, LAZY EXEC PERSON.**

## PROFQUOTES

### TWO PEOPLE SENT PROFQUOTES THIS WEEK!

"This demo is boring. Let's have our children's heads flying around on the screen!"

Avery, CS 349

"You can't just assume everyone has this fancy high-resolution 640x480 projector."

Avery, CS 349

"If you make this [TV remote], I will buy it because it's named the 'Space Commander Three Hundred'. I have no idea what it has to do with television, but it's cool."

Avery, CS 349

"I bought a new car last year and you'll hear me complain about it for the rest of the course."

Avery, CS 349

"I just want to eat pizza and write code."

Avery, CS 349

"My first thought when seeing Microsoft BOB is 'Cool! What can I burn?'"

Avery, CS 349

"Developers are not people. We're not normal."

Avery, CS 349

"I just want to eat pizza and write code."

Avery, CS 349

"The department names that matter only have 2 letters, like CS."

Weddell, CS 348

"I should get credit for not mentioning CS 245."

Weddell, CS 348

"If you know an efficient algorithm to produce the optimal schedule for this class of problem, you can win a million dollars; I mean, if you know such algorithm, tell it to me. I'm sure we can work out some sort of prize-sharing scheme."

Swamy, CO 454

## WE STAND ON GUARD REVIEW

*We Stand On Guard* is a six issue comic book that tells the story of the United States invading Canada. It is written by Brian K. Vaughan with art by Steve Skroce and colouring by Matt Hollingsworth. Picking up the book, I expected to read something that was deeply Canadian. I was definitely not disappointed. It has hockey references, French Canadian slang, and a great monologue about the Canadianess of Superman. It is a great celebration of Canadiana and interesting look at Canada-US relations.

The story also deals with the horrors of wars. It is not a light read. The comic book is heavy. There is no clear good guy. It is a tragedy.

All in all, I really enjoyed reading *We Stand On Guard*. I would give it 4/5.

*Beyond Meta*

## THE LITTLE WASHING MACHINE THAT CAN'T

3 am, June 6. One day before Midterm.

"It is a good - perfect - day for doing my laundry."

Walk down the hallway into the laundry room. Two washers, two dryers, all smell like feet. No one is here, the light are off, nothing but dead silence. It is giving off eerie feeling of me failing exams.

"No one is using the washing machine but me, awesome." So I walk upstairs to get my dirty laundry.

I forget my washing detergent, so I have to go back. I start to get a little salty. But that is not even the start of the salt. I load all the clothes into the washing machine, I pick a mode, I insert a coin. Nothing happens. "That wasn't supposed to happen," I think.

So I load the clothes into the other washing machine, insert the coin, pick a mode. Nothing happens again.

My jimmies are properly rustled. I plug and unplug the washing machines, I make sure the backside is connected properly. But the problem is that I have a toonie but the coin slot only takes two loonies. I run to the nearest 24-hour gas station to exchange my cash.

I try to start the wash machine again. No dice.

5 am. Man, all I have to say is: "Nothing Can Start Now."

♪ When the Washing machine can't start. ♪ It swallowed \$\$ of my change. ♪ There is nothing that I can do, There is no cloth it can wash, there is no way it will start. ♪ I think it can't I think it can't I think it can't. Even it I try, there is no way it will be over. ♪ NOTHING CAN START IT NOW ♪

## PROF<sup>CONF</sup>SSIONAL

REAL STORIES FROM REAL PROFESSORS, MODIFIED TO PROTECT THEIR IDENTITIES.

"I used to love my job at UW," he told me with a forlorn look. "I used to love waking up in the morning, watching South Park over breakfast, preparing a few references and jokes."

Here we are, in a booth at Mel's at 3am on a Sunday, surrounded by silence and a couple of very dedicated partiers.

"So what made you leave?" I ask.

"Well, eventually the references stopped being funny to my class. See, I was sentenced to lower year purgatory, where you teach the classes nobody wants to teach. Except for that one guy in the department, of course, who loves first years but happens to be on sabbatical."

"That's it? You weren't funny anymore, so you left?"

"The jokes were the only thing keeping me going at the end. Once you've been teaching these courses, you are stuck in a loop of the same student interactions every day, and the same patterns every term. Nobody comes to office hours except the day before assignments are due, or - more often - the day they get handed back. At least one kid's parents email me every week, and about one comes and visits me every other term. At least I've only been propositioned by a student once, but it was a dude and I am not gay, so that was a failure to research on his part. Not too different from his grades."

"Parents actually visit you?"

"Oh yeah - all the time! But aren't you going to ask me about the proposition?"

"I'd rather not know about it." Or *write about it*. Sorry readers!

"Oh, alright." He mumbled in a dejected tone, "This is my best experience - no, most *entertaining*."

The sinister tone took on new meaning as he paused to glance around the diner. The two partiers had gone and it was just us now. They probably lost whatever bet had been going on around the fourth order of waffles.

"All right," he continued, "so this lady knocks on my office door, right after mid-terms, and I know right away what is about to go down. She has this extremely polite demeanor but from the death glance she gives to the kid outside my door I can tell that she is pure tiger mom all the way down. Ever read that book?"

"I've heard of it."

"So she asks me some questions about the midterm and of course I tell her that it is her son's test and I can't discuss it with her. He instantly whispers 'it's ok' so I just go with it. He points to various questions; I explain why they are wrong. They were obviously wrong; this kid had no clue what was going on in the course. He couldn't even get part marks. So all of a sudden, his mom who's been silently standing behind him the whole time, asks me 'What is final grade?' 'It is right on the front, 18/40.'" He pauses to take a sip of his milkshake, "And guess what she asked next."

"If you added it up right?"

"Not quite." Another sip. "'Who are Stan and Kyle? Why are they special students?'

She was asking me about the bonus question! 'Who is cooler, Stan or Kyle? Justify with examples from class.' So here I am, explaining to this lady all about South Park and of course I go for the most offensive episode I can remember. She listens with extreme attention, I am expecting to get reprimanded by the dean at this point so I just keep going. In the end she just reams out the poor kid for not paying attention in class. No questions, no complaints, never saw her again, but that kid was in the front row the rest of the term."

"Did he ever laugh at the jokes?"

"Oh no - he was *completely* clueless and barely passed the course with a 55."

It's all small talk now. That and a couple stories he asks me not to record. It is a confessional, after all.

*The Box*

## N THINGS NOT TO DO WHILE STUDYING FOR MIDTERMS

- Leave your wifi or data on and check your phone every time you get any kind of notification.
- Listen to the kind of music that you just have to sing along to.
- Cry and complain about how hard school/life/everything is.
- Decide that perhaps now would be a great time to clean your entire apartment.
- Think about all your friends who are not in school for the spring term and how much fun they're probably having while you're stuck here studying.
- Take a break after studying for ten minutes.

*TheUndecided*



## MINISTRY OF TRANSPORTATION MAKES GRAVE MISTAKE

This past month, Ontario's Ministry of Transportation made a foolish and ill-advised decision. They granted Beyond Meta the permission to operate huge heavy death machines known as "cars." Some genius at the ministry decided that filling a multiple choice test was a perfectly adequate metric for assessing someone's ability to drive a car.

The ministry is apparently unaware that book smarts are not equal to street smarts. Perhaps if they had realized how uncoordinated Beyond Meta was, they would have reconsidered. Beyond Meta doesn't even like playing video games that require fast reaction speeds. Driving is like playing a video game where people die if you screw up.

Thankfully, the average person need not worry about their safety as Beyond Meta is far too busy writing *mathNEWS* articles to pose a threat to them. The same is not true for the people for whom Beyond Meta has strong feelings for. They should be worried.

*Beyond Meta*

## GRIDCOMMENT

First, it would appear that the nefarious and crafty conspiracy nuts from issue one managed to get away with their plans, despite using a very cryptographically insecure four square cipher to transmit their information. Since nobody managed to submit anything, I award the prize allocated to issue one to lp0onfire, since him winning that one game of Nomic was a conspiracy

fulfilled. Their message will be reproduced in the issue elsewhere.

Second, I would like to congratulate all those who have submitted something for the puzzle last issue; I was worried that it was going to be way too hard or too easy. A solution (that is, the one I intended) is included elsewhere in the issue. A note to all the solvers: I had originally wanted to clue "tsars" instead of "issue" but then decided against it because it would be impossible to distinguish it from "czars", but after the puzzle went to print I realized that wasn't actually an issue.

Michael Zhu has submitted a correct answer to the puzzle in issue 2. His answer to the *gridQUESTION* "What do you dread the most?" is "Stephen New's assignments.", which I suppose is something to dread. Honourable mention goes to Sean H, who made one mistake in his solution, but his answer was a delightful "A *grid-WORD* that's entirely cryptic clues that don't work."

Speaking of cryptic clues, I would like to point to this issue's puzzle. As you can see, it's a gird. There are also cryptic clues, most of which I made up from scratch (since I have no cryptic clue writing experience before last night, they might not work -- you should look up how to solve cryptic clues if you've never seen them before). Tremble before me as I strike dread into your very soul, Sean H, \*mwahahahaha\* \*cough\* \*cough\*, \*ahem\* Sorry.

However, there's a twist -- the words are written into the boxes scrambled. Each row or column in the grid is a rearrangement of the letters in the word clued in the row or column (I'd say anagram, but the resulting sequence isn't exactly another English word).

In addition to the seven words clued across and down, there is a special, extra long word, whose letters have their locations marked into the grid to help with the placement of the letters. This is a fairly difficult puzzle, suitable for the student in class who wishes for a distraction, or the student who doesn't want to be studying for their midterm in this season. After all, there's a prize at stake -- the most correct solution, defined as having the words figured out and the number of correct letters in the grid, submitted to *mathNEWS* before 6:30pm on June 20th, 2016 either physically in the **BLACK BOX** or via email to [mathnews@gmail.com](mailto:mathnews@gmail.com), will receive a shiny whatsit prepared by the editors.

In the event of a tie, the winner shall be selected by my favourite answer to this issue's *gridQUESTION*, "What is your favourite type of puzzle?". Given how the first issue went, I would like to point out that a tie of zero correct answers is a valid tie. Go forth, and solve!

*Across the ocean,*

*Zethar*

## LAST LAST ISSUE'S SOLUTION

late ly the federati on of stude nts is up to its regular tricks again despite the numerous recent fiascos such as the federati on hall issue the disput e regarding the waterloo science fiction and fantasy club library and the imprint of ficede bac le the organization manag e st o till hold an iron grip on the student politics and manag e s uch a fairs the secret to how the federati on keeps power is understanding that they control all student financing on campus thus if you are a student who want s to acquire any funding you must crawl to the federati on and beat their complete mercy allowing the organization to lose over all the student s without other oversight the situati on arises via a policy of the university to recognize only the federati on of student s as the rightful student body on campus and thus grant s them the sole right to dole out the monies collected from the student s for the purpose of facilitating student life howe ver this grant s the federati on unchecked power to suppress student activities which it does not agree with this should not be allowed to stand yet the silent majority today has not risen to change this status quo vivalare revolucion down with the establishment and have it overthrown xoxoxoxo

**GRIDCLUES**

**ACROSS**

1. The second picnic ails your tooth
2. Times out?
3. Pirate sounding vulgar shanty
4. Nothing in a car crash except this instrument
5. Elixirs in depot & ION stop
6. Scottish peasants' fasteners
7. Murderer outside apartment, commander

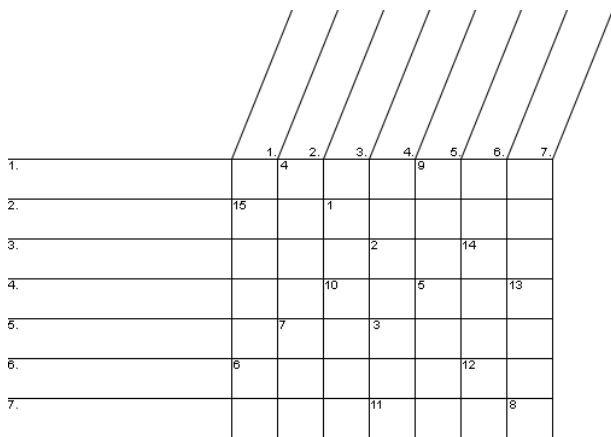
**DOWN**

1. Diabolical Saturday with an integrated circuit
2. His skewed argument confuses choirmaster?
3. Pudding oddly lacking teal poison crab
4. Dull press release on beheaded mosaic
5. Reportedly handheld luggage has rotting flesh
6. Direct route in cannon's top
7. For the audience, I see Rita's back being like *math-*

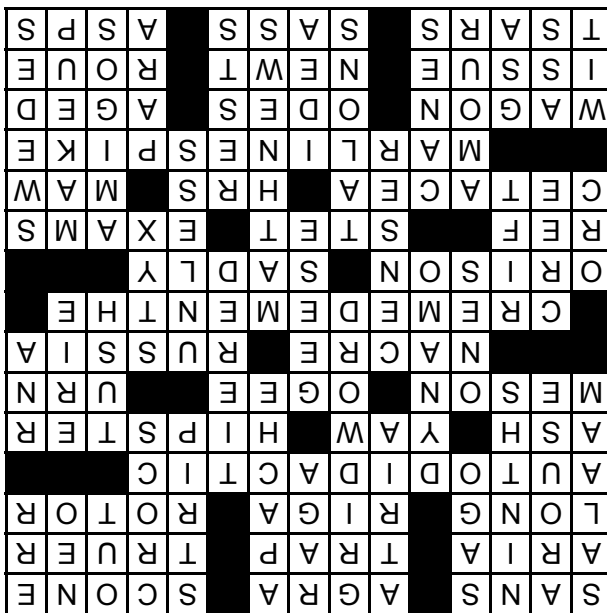
**NEWS**

Special: Crazy or inaction traps!

Solution: -1 -2 -3 -4 -5 -6 -7 -8 -9 -10 -11 -12 -13 -14 -15



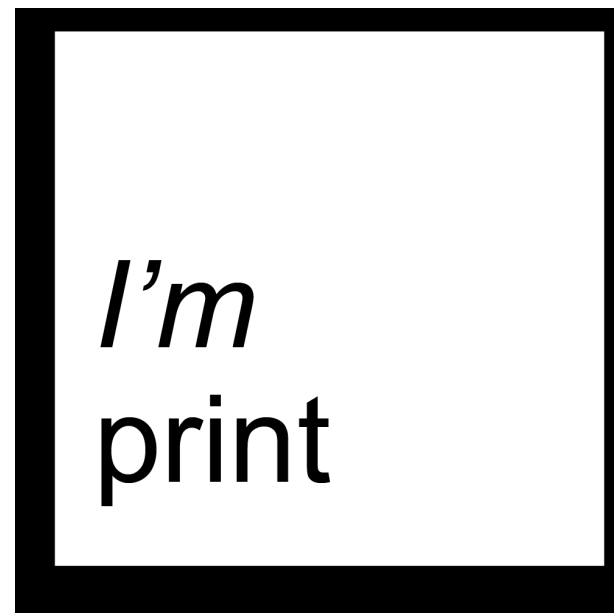
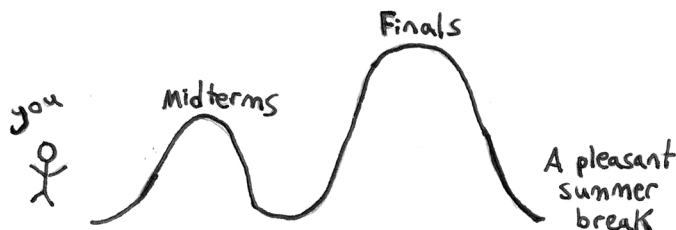
**LAST WEEK'S GRIDSOLUTION**



**ARTICLE OF THE ISSUE**

The award for Article of the Issue goes to Scythe Marshall for "An Application of Poetry to Group Theory" and "An Application of Group Theory to Poetry". Two articles of the issue for you, Scythe Marshall. You go, Scythe Marshall. Congratulations. We'll probably send you an Amazon gift card or something. Happy shopping.

*The Editors*



**ISSN 0705—0410**

FOUNDED 1973

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

This work is licensed under the Creative Commons Attribution-Noncommercial-No Derivative Works 2.5 Canada License. To view a copy of this license, visit <http://creativecommons.org/licenses/by-nc-nd/2.5/ca/> or send a letter to Creative Commons, 559 Nathan Abbott Way, Stanford, California 94305, USA. Terms may be renegotiated by contacting the editor(s).

**EDITORIAL STAFF**

Katherine Tu (im)

Zishen Qu (print)