

# *math* NEWS

Volume 125, Issue 4

Friday, June 27<sup>th</sup>, 2014



Mathies VS Midterms: The Ultimate Showdown



**lookAHEAD****mathNEWS**

|         |   |
|---------|---|
| June 27 | Issue 4 heads north for the long weekend                            |
| July 3  | Issue 5 gets lost in the great Canadian wilderness                  |
| July 7  | Issue 5 rides out of the wilderness on the back of a majestic moose |

**CECA**

|         |                                |
|---------|--------------------------------|
| June 27 | Job post (main group) opens    |
| July 2  | Job post (main group) opens    |
| July 3  | Employer continuous interviews |
| July 4  | Ranking closes, match results  |
| July 7  | Employer continuous interviews |

**MathSOC**

|         |                         |
|---------|-------------------------|
| July 8  | Pints with Profs        |
| July 11 | BBQ Sports Day          |
| July 17 | MathSoc General Meeting |

**University**

|         |                                      |
|---------|--------------------------------------|
| June 30 | University closed (Canada Day's Eve) |
| July 1  | University closed (Canada Day)       |
| July 11 | Drop, penalty 1 period ends          |

**Miscellaneous**

|        |                        |
|--------|------------------------|
| July 1 | Canada Day             |
| July 4 | Independence Day (USA) |

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$\perp$   $\cup$  ( $\equiv - \equiv$ )

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Murphy Berzish (Football), Katherine Tu (Rugby), Rachel Wiens (Soccer)

**mastHEAD**

There is a hallowed occasion that comes only once a semester. A sacred observance that sets every university student's heart flutter with joy, and brightens the eye of even the most battle-hardened professor. Yea, even the omniscient dean pauses midst his empyreal thoughts to observe this numinous holiday. Rejoice children, for the long weekend is upon us! In honour of the occasion, we inquired of our writers, "How will you spend the Canada Day long weekend?"

Soviet Canadian ("Games Games Games Games Games ... (Summer Sale makes this necessary)"); theSMURF ("Trains Trains Trains Trains Trains..."); waldo@<3.LE-GASP.ca ("I have a 6-day weekend, so I have no idea. SO MUCH TIME WHAT IS THIS NONSENSE ?!?!"); MeaninglessQuips ("Fighting and fighting, functioning and failing, feasting and fornicating."); Stubbs ("Going to the beach."); s,t, $\in\{2k,k\in\mathbb{Z}\}$ ,144 ("probably squandering it..."); tesseract ("Camping?"); \& ("ILLEGAL\_ACTIVITY at [redacted location]"); unit ("learning about group schemes"); IceNine("sleep"); Zethar ("The most reasonable thing to do at this time of year is to be whisked away to the mystical land of Gensoukyo, but alas, other obligations force me to be elsewhere; woe be I in this predicament that forces me to attend other functions due to obligation, and that even speaks not of the academic quagmire which awaits upon the cessation of said long weekend. Oh, joyous days, only to be tantalizingly far as I sit wistfully trapped in a board room discussing the ramifications of our plans for the future as the summer day burns away. (Give yourself a pat on the back if you got this far.) To be in the hot springs under the endless starry skies, to wish well to others in the various facilities of the land, to idle and chat with its interesting denizens I do strive to go and do, perhaps with the help of some *betweenness* to smooth the way. ;P"); bunnyED ("cuddle with bunnies"); MuffinED ("Changing my Facebook status after attending a wedding.")

**What happened on June 27?**

What went wrong, June 27? You had just as much potential as any other day to be exciting... and you're the MOST BORING DAY OF THE YEAR.

Other days are filled with murder, mysteries, and mayhem – it's time to step up your game. Live a little!

- 1844: Founder of the LDS movement is murdered by a mob at an Illinois jail
- 1880: Helen Keller is born
- 1898: First solo circumnavigation of the globe is completed from Nova Scotia
- 1899: Highest ever recorded score in cricket is scored
- 1929: First color TV demo in NYC
- 1940: USSR returns to Gregorian calendar
- 1954: World's first nuclear power station opens near Moscow
- 1966: First sci-fi soap opera premieres on ABC-TV
- 1977: France grants independence to Djibouti

## Office Gossip #2

### *Lockers*

MathSoc recognizes that storage space on campus is a huge concern to students in the faculty. You all are given so many hours of assignments and midterms studying each week. The school's new scheduling system seems to have a fond liking for awkward too-short-to-go-home-but-too-long-to-not-be-productive breaks between class. When combined, it becomes impractical to not study on campus, but that means lugging heavy textbooks and notebooks to campus, classes and back. To help combat this, MathSoc recently ordered a large number of new lockers to loan to students on a termly basis to store school materials and personal effects.

With these new lockers also came a newly updated Locker Distribution policy. An important thing for you to know is that, unlike in the previous policy, students who sign up for a locker are given a random one, which they are required to keep for the term. Students may not store any prohibited items, including "weapons, any flammable substances, explosive devices, or illegal substances. Lockers should also not be used to store food, drink or other perishable items." MathSoc representatives may enter a locker which is suspected to violate these rules without having to notify its occupant.

These new lockers were supposed to be available on June 1<sup>st</sup>, but some technical issues have complicated and ultimately delayed this launch. Thankfully, by the time you read this, locker signups should be available once again. Come by the MathSoc office (MC 3038) to learn how to sign up.

Darcy Alemany  
MathSoc Office Services Manager

## WatSFic SEZ

### *Now with 200% more IRL*

Hey math persons, WatSFic, the Waterloo Science Fiction and Fantasy Club, is a thing that does stuff! We have regular meetings in PHY 150 every Wednesday at 6:30, as well as a whole mess of other exciting events, such as:

- Movie nights, fortnightly. The next movie night is July 2<sup>nd</sup>, in PHY 150, right after the weekly meeting.
- Humans vs Zombies will be happening this term, as usual. Stay tuned for more information.
- RPGA (for roleplaying games like D&D) every Friday at 7PM, in MC 2054.
- FNM (Friday Night Magic, for those interested in Magic: the Gathering) every Friday at 6PM in MC 2034.
- Book club! This term we're reading *Neuromancer*. The first meeting is this Saturday, June 28, at 1:30PM in the EIT dinosaur café. We'll be discussing up to Chapter 11.
- Board games, every other Saturday, including this Saturday, June 28, in the MC C&D.

If you want to get in touch with us, send us an email at [watsfic@gmail.com](mailto:watsfic@gmail.com), or join our mailing list here: <http://www.watsfic.uwaterloo.ca/contact>.

Stephen Gross  
WatSFic VP

## Books by Brandon Sanderson

I've heard some of you like books, and some of you like fantasy. Well, Brandon Sanderson writes books that are fantasy. In my opinion, and the opinions of thousands of others, they are very good books. Pleasantly long, good characters and action, and above all, fantastic world-building. He creates thematically coherent and original magic systems and fleshes out worlds around them to the full logical extent. Case in point: *Mistborn* trilogy.

Some people can ingest and burn some metals to get specific benefits. Burn iron to push on metals around you; burn steel to pull them. Ooh, big deal. You're kind of magnetic.

Tin enhances your senses. Pewter dulls your senses and makes you physically stronger.

Zinc lets you "push" on other people's emotions; bronze dulls them. Cool, and powerful for anyone who wants to take over the world, but you have no specific control over anything other than the magnitude of people's emotions. A problem.

Copper or bronze reveal or hide the use of any of these alomantic powers. And that's about it.

So, um, what happens in this world? Well, the simplest one is pushing on iron. This is useful for shooting stuff and people, and so people with this power are called "coinshots." But physics is a thing, so if you push on something that's solidly anchored, you're the one who moves. You can throw a coin on the ground and push on it to soften your landing. Or you can install a series of metal bars in the ground for people to push off and fly.

So allomancers operate under cover of darkness, for mysterious intrigue reasons. Largely, they are members of noble houses nefariously pushing their own agendas one way or another. And then they go about their daily lives and social functions pretending all of it never happened. But they can push on each others' emotions...

As I said, *Mistborn* is a very good series, with good characters well-built into this setting, and its fair share of surprises too.

He has other books too, with very different magic systems. And when you read enough, you'll see that they're all linked together.

tesseract

## Bad Math

### *Tournament Style*

In light of the rest day for the FIFA World Cup, I decided to discuss some aspects of tournament systems, and mathematical weaknesses that arise. There are several major types of tournaments, each with their own weaknesses.

The most basic type of tournament is a round-robin tournament. Every team plays every other team, and some algorithm is used to rank the teams off of the results. In theory, this should be the most fair way to determine a winner. In practice, it can result in teams being forced to play games once they have already been eliminated from contention for the top spots. As well, it has the weakness of requiring  $O(n^2)$  games to find a ranking.

On the flip side, there is a single-elimination style tournament, in which a competitor is eliminated after a single loss. In this style, a lucky win or loss can have a huge effect, allowing a relatively unskilled team to do very well, or a very skilled team to do poorly. The advantages are that it is exciting to watch and allows the creation of a ranking in  $O(n)$  games.

There are a variety of combinations of the two, whether using algorithms to determine unnecessary matches or better matches in round-robin, or increasing the number of games for elimination. Essentially, the tournament problem can be rephrased as a sorting problem, where comparisons are done probabilistically. Trade-offs will need to be made in terms of number of games played versus correctness of results.

The current setup of the World Cup is a suboptimal tournament for finding the best team. Firstly, the seeding in the round of 32 is not done mathematically properly, and as such will increase the chances that the teams that make it to the next round are not the best teams. Secondly, the second part of the tournament is a single-elimination stage, which means that a lucky win could completely upset the ordering of the teams. Clearly, the World Cup is not organized to find the correct ordering of teams. Perhaps there is some other reason to organize a tournament than to find this ordering.

MeaninglessQuips

## Markers: A Love-Hate Relationship

I have been a marker. I marked MATH 217 in a previous term, which is Calc 3 for engineers, and it was mind-numbingly frustrating to see them get so close and fail, but what was even worse was when they wouldn't even try. What was *really* bad was when they would blatantly copy from one another and think I wouldn't notice.

The reason I will never mark again is that I felt an obligation to properly read and really try to understand what was written and what was wrong. It consumed so much of my time because I insisted myself that I would leave comments and try and be helpful.

I bring this up because, right now, I have a shitty marker.

They marked my assignment and there were many instances in their grading that I greatly disagreed with. "Maybe it was just me," I told myself. I went over the solutions and didn't see where I went wrong... I assumed, on the first assignment, that I was wrong, or I didn't communicate my answers properly, or that there were minor things that needed to be changed for future assignments.

The second assignment marks are back and I did terribly. I must not have understood the material at all, right? But I didn't get a single question wrong. I've gone over the solutions and my assignment parrots what was written in them. Not word for word—there is definitely deviation, but I would not call it substantial and it definitely does not deserve such a low mark.

So I took a look at the comments and they were most enlightening. I lost 4 marks on one question because I let the answer as  $\log(ab)$  instead of  $\log(a)+\log(b)$ . And this carried through the entire assignment. There was another part where I lost marks for failing to compare two things, **EVEN THOUGH THE QUESTION ASKS FOR NO SUCH THING**. It's like they didn't read my solutions. Or the assignment. Here, I'll just get my ouija board out so that I can know what question you're actually asking.

Anon

## Computer Passes Turing Test by Posing as a Waterloo Math Major

A historic milestone has been passed today, as for the first time ever, a supercomputer convinced 33% of judges that it was human. The program was written by undergraduate students and runs on a pair of supercomputers located on the third floor of MC; it simulates "Eugene", a socially awkward math major. Below is a short transcript of my conversation:

**Me:** Which is heavier, a pound of lead or a pound of feathers?

**Eugene:** I'm not sure, I don't think we covered that in class. Which program are you in?

**Me:** How long, in seconds, does it take for light to get from the sun to the earth?

**Eugene:** It's OVER 9000! I think. But I know you are trying to trick me. By the way, what did you get on the CS251 midterm?

**Me:** I'm not trying to trick you, I just need to know if you're a human or a robot. Answer me, what's the capital of China?

**Eugene:** No idea, I usually study things on the midterm. I haven't asked you yet, are you in co-op?

**Me:** Goodbye Eugene, it was nice talking to you.

**Eugene:** Goodbye for now. By the way, how many interviews have you got?

Luckytoilet



# “Study”: Production Night Useful For At Least One Thing

*Now with an even smaller sample size!*

In a recent and unofficial manner yet to be scrutinized by a reviewing panel, researchers have observed an as-of-yet undocumented benefit to the phenomenon known as Production Night: namely, the fact that participants who attend the oft-maligned evening are many times more likely to actually write an article for the publication **mathNEWS** than the average person off the street.

Says the lead researcher: “It’s a little bit too early to tell, and there’s a pretty small sample size of writers, but it certainly seems that if one attends **mathNEWS** Production Night, one is almost guaranteed to write at least one article, whereas without this attendance, one is liable to, well, not write at least one article. It kind of just makes sense, actually, if you think about it.”

In an exclusive interview with the reporter, he (the lead researcher) supplied the key insight in the following: “The justification for this claim lies in the vastness of the population of non-attendees of Production Night. That is, there are over seven billion people in the world; specifically, let  $N$  be the number of people at the time that Production Night starts on any given fortnight, so  $N$  is greater than seven billion. We can describe the number of people who do not show up to Production Night by  $N - A$ , where  $A$  is a positive integer describing attendance at Production Night. With probability one,  $A$  is strictly less than 50 (this data is empirically verified). The average number of articles in **mathNEWS** is very roughly bounded above by 100 (4 articles per page, 25 pages). From a previous study, the average number of articles written by an attendee of Production Night is  $p \approx 1$ . Then the ratio of “articles written by non-attendees” / “number of non-attendees” is, with probability one, roughly:

$$r = (100 - A) / (N - A) \approx 100 / N < (1/7) * 10^{-7} \\ < < < < < 1 = p.$$

“Hence non-attendees are, on average, very unlikely to actually write anything for **mathNEWS**. Indeed, if this were not the case, then the editors would have far too much work to do in putting the publication together, not to mention the repeated cost of printing many copies of a very large newspaper would soon ruin the long-standing organization.”

Mathematical justification (using a calculation performed on the reverse side of a letter-carrying package) aside, it was still somewhat surprising to note that Production Night has a use besides supplying food to the writers for the first time since the last Production Night; this seems to imply a continued need for the existence of the event.

On a personal note, the reporter wishes to make known that in the very recent past, he was up at a normal (if close to bed) time for him on Monday nights (roughly 22:30 PDT) when he realized that **mathNEWS** was due to come out four days from then, and it was 01:00 EDT on the Tuesday before. He then took a four hour nap, wrote the story which you have just either consumed or TL;DR’d, and submitted it with about forty-five minutes to spare before the 07:00 EDT deadline, before going back to bed. It is unknown if the creation of this article is related to its content in a causative manner.

The reader is likely able to guess, though.

Scythe Marshall

## **mathNEWS** Blood Shortage

Last week I noted that blood was cheaper than printer ink and that **mathNEWS** would be printed in blood from now on. Due to this decision, few writers were able to make it to **mathNEWS**’ production night after being drained of all fluids, and thus the content sucks more than usual. The blood shortage has caused **mathNEWS** to reconsider its blood policy, and we shall be returning to ink.

Stubbs

## The Best Friday the 13<sup>th</sup> Ever

Despite the day, this Friday was excellent. Not only was today the birth of another issue of **mathNEWS**, but the expected rain turned out to be sunshine. At the Bon Appétit, I chanced on a spicy chicken breast that was twice the regular size making the most filling one ever. Whoever said that Friday the 13ths were bad luck should recheck their facts. It is obvious that all Friday the 13ths occur on the best day of the work week (Friday), so how can they possibly be ‘bad’?

~√(-1)

## Last Week's *gridWORD* Solution:

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

## Info Session Grind

"Tween classes and labs  
Tutorials 'n tests  
Lies the specter, the hope  
Of a co-op far far away  
Sunny Santa Clara  
Rainy Seattle  
Noisy New York  
Any place but Wintery Waterloo

Sighted in the distance  
The obstacle comes into view  
Recruiters 'n HR bunnies  
At their flashy sessions  
Sit through the talk  
Try not to sleep  
Clap at the end  
Dazzle 'em with our résumé  
Chat 'n mingle  
Get their email  
Hope it ain't generic  
Eat their grub  
Campus Pizza you looza  
Not even yellow-coloured  
But in white boxes now

Apply on Jobmine  
Wait while it sleeps  
Get the interview  
Dynamic programming  
Dijkstra will do  
Greedy is my middle name  
Consider corner cases  
Double check my code  
Ace the question  
I hope

Wait for a response  
Any reply will do  
Hello, anybody there?  
Get back a prefabricated message  
You are not the best fit at this time  
F\*ck You  
Err, Thank You  
Back to the info session grind

TRK

## Baby Elephant Gifs

Ever get slightly down from all the shit going wrong in your life?  
Ever feel completely isolated and helpless as you drown in your own incompetence? Ever feel the need to just get up and run out screaming halfway through a midterm? Well, fret no longer, just look at cute things on the Internet and instantly feel less like a useless piece of shit!

Stubbs

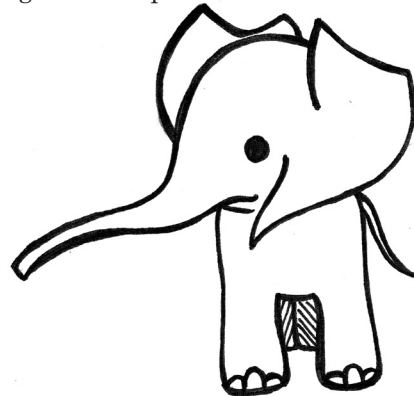
## Summer Games Done Quick 2014: IceNine's Picks

Hey everyone. Summer Games Done Quick is a video game speedrunning marathon for charity. As of publication date, it is still going on, If you want to watch and/or donate to the cause (Doctors Without Borders)! Here is a list of things I think you should check out, by either watching the recordings of the runs or catching them since they're still coming up!

- Super Mario 3D World by SlowKingsPants has a bunch of silly acrobatics, some interesting skips, and since it's a new game, has some silly things like "touch strats"
- Sonic block: Sonic 2 and Sonic Unleashed have some pretty hilarious skips.
- Mega Man block: 1, 3, 5, 6, V all run in a row, with at least one faster than the official Speed Demos Archives run.
- Zelda Four Swords Adventures, a game not many people have played for the GameCube, so it's pretty interesting to watch.
- Marble Madness. It's there in the name. Also in the vein of ball rollers, there's a Super Monkey Ball 2 expert mode race.
- Super Meat Boy 106% run with the first world done blindfolded. Some good insanity.
- Castlevania 64 by Cosmo. He's a cool guy.
- Castlevania: Symphony of the Night race.
- Battletoads and Double Dragon. Hard game.
- Teenage Mutant Ninja Turtles IV race. Pizza time everyone.
- Zelda: Oracle of Seasons.
- Metroid Prime 1/2, then Metroid Fusion race. Good stufffff.
- Super Mario block. 2, 3, World, Sunshine, with the last one being a race. More Mario than you can shake a stick at. All are warplless or 100% except the race.
- Pokemon Red and/or Gold. Likely to be a memefest based on Twitch Plays Pokemon.
- Zelda: Link to the Past and Between Worlds. The latter is rather new, so there's some fun silly stuff to see.

Check out the live runs on [gamesdonequick.com](http://gamesdonequick.com) and the recordings on the Speed Demos Archive's YouTube channel.

IceNine



## Baby Elephant Not-a-Gif

# March of War

*Where the Glorious Union triumphs! (I hope)*

March of War is an alternate-history online strategy game set in the early 1950s with super science BS (walkers, sonic tanks, etc.), where 6 super-powers consume the world's lands then plunge them into war. It plays like a reverse-Total War game, with a real-time map that contains turn-based battles. As a commander for one of the super powers, you fight in a contested territory against players or AI, capturing zones on a small map to receive resources and deployment zones. How much you win or lose affects the overall fight for the territory. If you just want to play some matches, unlock new units, and get better at the game, then you just need to do what you do in all strategy games and understand every unit so you can plan an opening move and react quickly (there is a timer to keep turns short). If you want to win the 'war', then you will immerse yourself in the 'politics' of screaming, name-calling, and finger-pointing that is the chat (at least it is for my faction right now, the others are okay), and work your way into the High-Command, where decisions on where to attack, who to ally with, and other plans are made. If this isn't for you, I suggest just helping in fights that you think are important.

There are plenty of issues though. One thing is that the AI is a little too easy for most, tending to be predictable and making sub-optimal choices, even on the 'Master' difficulty (the highest setting of 8 for the AI), but since the in-game rewards for beating Master AI match those from beating players, many will 'grind' against Master AI to get easy victories and gold. Gold is used to purchase more unit cards, which dictate what kinds and how many units are available for a fight (there is no limit on the amount of cards you can have though). Playing against others isn't too great though, as you won't have the units that make your faction powerful (like artillery or heavy vehicles) until you have played for a bit, but your opponents might, which leads to the aforementioned grinding just so you can get what you want and need. Once you have all the units though, there isn't too much to do from there besides fight some more and try to win the war.

If you are interested in casually playing a turn-based strategy game, and watching a map slowly change colours, take a look at March of War on Steam, and maybe you can join the Glorious Soviet Union in its slow march to victory.

Soviet Canadian

## Anti-profQUOTES

This publication thrives on *profQUOTES*. Admit it, you flip to the back and look for them rather than reading actual content, whatever that is.

Sadly, rates of submission of *profQUOTES* have been lackluster this term.

Solution: Make up the difference by printing the completely normal things professors say.

All names have been removed for anonymity/to hide the fact that I only got these from one course and I don't want to make that prof look bad.

- "Just a reminder that we have a midterm next Tuesday."
- "And that's exactly what we were looking to prove."
- "Let's clarify this with a few examples."
- "That's just a polynomial, we know how to integrate polynomials."
- "Sorry, that's supposed to be a minus sign."
- "This turns out to be a direct corollary of <other theorem>, but unfortunately we can't prove it yet."
- "We'll finish proving this next class."

Submit your own anti-*profQUOTES*! What totally boring things do your profs say? We'll publish them. Alternatively, if you want actual funny things, submit real *profQUOTES*. We don't really care. Just write something down.

tesseract

## profQUOTES

"You come to Waterloo because you know what you want to do. If you don't know what you want to do, you go to University of Toronto."

Cui, NE 343

"You guys should really ask more questions. If you don't ask more questions we'll just get through more material."

Wilson, NE 344

"If you throw me into space, what's gonna happen? I'm gonna go 'poof', hopefully I'll open my mouth before I freeze... I know some of you are thinking about this. This is kind of a morbid way to end the lecture."

Abukhdeir, NE 318

"It sucks to be short."

Goulden, CO 380

"...'Encounter', that's a polite word for 'hit'."

Goulden, CO 380

"How did I get a Ph.D in math?"

Han, ACTSC 431

"Actually, head-of-line blocking happens at McDonald's too, not that I go there to eat; I just look at their queueing discipline."

Tripunitara, ECE 358

## The Basics of Being a Hipster

Hipsters are generally frowned upon for being pretentious, ludicrous individuals. The way I see it, every person wants to feel important and wants for their life to be meaningful. Hipsterism at its core is trying to fulfill that need by having unique experiences. There are far worse things in life than supporting a lesser-known artist, though there is no need for the pretentious attitude. Having examined the legitimate motivations behind this lifestyle choice, let's go through some tips and tricks on how to be hipster.

First and foremost, invent your own vernacular. Your goal is not to be understood, but to create a life experience like no other. So in this article we shall not use the terminology of "mainstream", but rather "digested", to refer to media that have been so thoroughly consumed by the unwashed masses that it has lost all of its nutritional value. And instead of "hipster" we will utilize the term "avant-garde explorer".

Now that that's out of the way, you need to pick your area of expertise. I would advise against picking music, as that domain is much too digested, and there are simply too many people who fancy themselves avant-garde explorers in that field to truly find terrain that has not been treaded upon. The trick is to be specific; don't just be a graphic novel avant-gardist, but rather one who specializes in Belgian 20<sup>th</sup> century comic books. For optimal results, it helps if you speak a language that is not English. English is simply not suited for true adventures into arcane territory, being as it were the most digested language in existence.

Follow these guidelines and you should be well on your way to being a true avant-garde explorer. Though if you really want to bring avant-gardism to a higher plane of existence, I would suggest inventing backwards time travel. It is one thing to have read *A Song of Ice and Fire* before HBO ever made *Game of Thrones*, but it is quite another to use an iPod before electricity was ever invented.

Beyond Meta

## *mathNEWS* 1kBWC, A History: Part 3

*A brief overview since last part*

After all the hassle in the early days, the next era in the development of the deck is the mutable age, which everyone agrees in retrospect was a terrible idea. In the beginning, well before some of the shenanigans that were described last installment, there was a card called "Editorial Power" which edits a sentence on any given card in the player's hand. This caused many problems after several people discovered that this was highly abusable. This caused several cards to change text, such as "Nerf Gun Zombie" from having no effect to making all zombies discard their hands. The card which caused the change was a card called "Faster With Experience" whose original text is to add the keyword "Anytime" to any card in their hand. Since there were a lot of cards which were designed with the specific consideration that they didn't have said keyword on them, it was explicitly ruled that instead players got a "spell token" which they may discard to play an-

## N things Psychomath didn't warn you about RE: Shipping

Where  $N=11$ , as in I can spare about 11 minutes to write this article, before getting the insatiable urge to refresh my Tumblr dashboard. Again.

1. You will become a meme-loving diddle.
2. "Why did I read that fan fiction about Jean Kirschstein and his horse... WHY EXACTLY".
3. Your internet tabs will consist of 8tracks (under your OTP tag), several instances of [Fanfiction.net](http://Fanfiction.net), over 15 Tumblr blogs with URL names that would not be welcomed in a school environment, and that one tab of UW Learn buried underneath everything else ruining your life.
4. Turning your CS HTML assignment into an elaborate shrine for your OTP, with references no one else will ever get.
5. New favourite expression: "????? ??? ...?????"
6. Ruining fandoms for your non-shipper friends. (But then again, who cares about the bootlicking peasants anyways?)
7. Everyone else is freaking out about exams but you're already numb from all the feels.
8. You will cry deeply over your OTP, more tears than any midterm mark has made you shed.
9. You will know what an OTP is. See #4 and #8 for related consequences
10. Being more inappropriate than all your male friends
11. Hashtagging your feels like #ICANTEVEN #help  
I need an adult #oh wait I am one #ughhhh-  
hhh #BREATHING HEAVILY #brb sobbing forever  
#AAAAAAAAAAAAAAAAAAAAA #theyarecanondonttouchme

Now ship to your heart's content. We will no longer be liable for collateral damage.

TheDopestHope

other card as though it had Anytime. In a similar manner, we have retroactively changed all the cards which edit cards to work under a similar (non-permanent) mechanism.

That is the last major change to the meta of the game, and the game has mostly been in stasis for the majority of the last year since there has been a lack of people who have expressed interest in playing with the deck. Today the major flavors of each of the contributors can be described as follows: ScruffyED, utility cards and thematic cards; Zethar, thematic cards and chaotic cards; IceNine, 'Simple' cards; (define this (not cool)), cards which enable play;  $s, t \in \{2k, k \in \mathbb{Z}\}$ , 144, 'Useless' Cards (no card is really useless, not even "White Flag: Anytime. You lose the game.") and many more.

Zethar



## Solstice!

Last Saturday, June 21<sup>st</sup>, was the summer solstice. For those of you who have forgotten your basic planetary astronomy, this was the longest day of the year for those of us here in the northern hemisphere, due to the Earth's motion around the Sun and the tilt of its axis and all that jazz.

So, other than a maximally efficient day to get sunburn and subsequent melanoma, what are the implications of the solstice?

Well, for one, it is now officially summer, based on our totally arbitrary system of delineating the seasons. This means absolutely nothing.

This year, because it was on a weekend (which the perspicacious reader will note is another arbitrary unit of time), the solstice coincided with KW's Summer Festival of Lights (or something like that). This was quite a lot of fun. I saw jugglers with glowing objects, street magicians (one pretty lame, one quite a bit better), and a large number of bands. I missed the drag show, sadly. But I went to the art gallery, and was pleasantly surprised by how much I enjoyed myself there. Then I went to nerd night, where I truly belong (kind of—see, I am a fraud) and played Artemis/Star Trek Bridge Simulator for two hours. I was

weapons officer. We didn't understand the interface, our roles, or anything about the game environment, so consequently we were very bad. It took us more than an hour and four tries to beat the easiest difficulty. However, fun was had.

The other time-honoured way to have fun at the solstice, of course, is a nice little pagan ritual. Many northern cultures have some kind of ritual to celebrate the solstice; these often involve a large bonfire, a lot of food, and—since they are often fertility rituals—some sex. Yay, sex! Much more fun than sacrificing goats. Pagan rituals have a bad name for that. I mean, sacrifice goats if you want, but I'd rather have sex.

If you don't want to have a giant bonfire, don't have a goat to sacrifice, and don't have anyone to have sex with, at least go outside. Because we have lots of shiny beautiful sunlight, and it's perfect for frolicking in. Like, seriously, the sun sets after 9, and mornings are beautiful and misty and luscious. Mornings are the best. Especially if, as in the previous paragraph, you're having sex. Oops, did I say that out loud? Regardless, sunshine = happy and rainbows (some conditions apply). But days are now getting shorter and you know what that means: Winter is coming.

tesseract

## Why Strawberry Shortcake Should be Made an Official Canadian Dessert

First off, I want to emphasize that I am not arguing that this particular dessert is better and more Canadian than all other desserts. Canada is a pretty welcoming place, and I feel like we would be able to welcome multiple desserts as ours. I merely think that we should embrace strawberry shortcakes as one of these desserts.

Strawberry shortcakes are a heavenly delight. The light fluffy pastry soaked with the sucrose, slightly-tart juices of strawberries topped with homemade whipped cream with a dash of vanilla and maple syrup. Mouth watering and utterly scrumptious, they should be an official dessert for the simple reason that it would be a good excuse to eat them more often.

The dish is already patriotic. Its colours are red and white. A good strawberry shortcake requires fresh juicy strawberries. Strawberries are in season for only a short period of time: from the end of June to the beginning of July. The optimal window of time to eat strawberries just so happen to coincide with our national holiday. It's like it was designed to celebrate Canada Day!

Well, regardless as to whether or not strawberries shortcakes are officially recognized as a Canadian staple, I know what I am eating this weekend.

Beyond Meta

## Food for Thought

At the time of my writing this, it has been 8 hours since I have had anything to eat. I regret the life choices that have led me here. My stomach is in open revolt, and yet, with the prize of free pizza dancing before me, I am too stubborn and cheap to do anything to sate my hunger until then. And so, unable to focus on any other topic, I write about food.

Sometimes I feel an outsider among my peers. In order to remain a functional human being, I actually need to eat every couple of hours. Sometimes I ask if anyone wants to join me for food, but am left to scavenge for a meal alone, as all my colleagues have already had their meal for the month. I often wonder if they have mastered some sort of meditation that allows them to transcend hunger, and subsist solely on coffee and Hearthstone. Or perhaps they have instead managed to slow their metabolism to that of a whale. We may never know.

I, however, have done neither. After a few mere hours without sustenance, my mental capabilities experience a very steep decline. I can't go more than a minute before my focus is ripped away from the task at hand, as my stomach politely reminds me that, as far as it is concerned, I have one job—one that I am, quite clearly, failing to accomplish. These decreasingly gentle reminders continue, rendering any sort of extended concentration impossible.

I would continue my tale of woe, but I fear before long I will be unable to go on writing. Soon I will pass out, or worse, descend to cannibalism. I apologize in advance, dear readers, if I eat anyone you particularly care about.

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

## An Interview With a World Cup MVP

Apparently, there's this FIFA World Cup thing that's going on right now. Turns out that football isn't just a video game; people play it in real life and it's quite popular. So popular, in fact, that everyone can't stop talking about it and I was sent to cover this famous sporting event. I managed to get an exclusive interview with one of the most important, influential, and game-changing cogs in the wheel that is the football.

**theSMURF:** Hello there! Thank you for taking the time out of your busy day to speak to me. I understand you just got out of a game, with a rather impressive performance. Five whole goals to yourself! How do you feel about that right now?

**Adi Brazuca:** Hi, theSMURF, I guess I'm pretty glad to be here right now, being a part of this amazing event. Yes, I got all the goals, but I can't take full credit for that. The teams were really supportive and I couldn't have done it without their help.

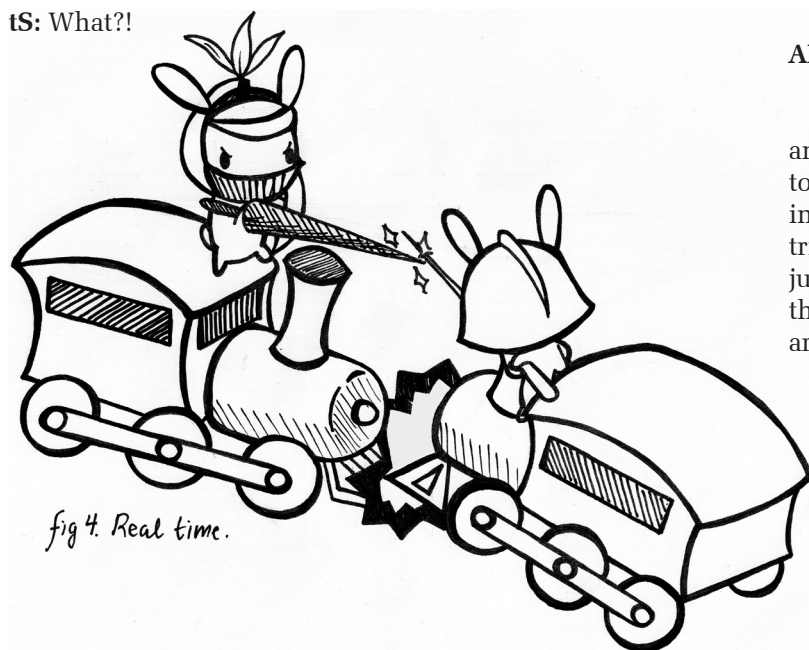
**tS:** I find it amazing that you are able to remain so humble. I mean, your performance stats just seem unreal and inhuman. You had 100% possession, 28 shots with 17 on goal, 232 passes, all completed. I'm not that big of a football fan, but this simply outclasses all the players. And even more amazingly, you manage to get stats like this every game. How do you pull this off?

**AB:** Oh, you know, I just get my head in the game, give it 110% and whatever happens, happens. Everything exists for a reason, and the purpose of my existence is to play football.

**tS:** With performance like this, it seems to me that you're on your way to become the MVP of this World Cup. I imagine every team will want to recruit you to play after this tournament. What is your plan for the future?

**AB:** To be honest, I think I'm going to be retiring after this tournament. Find a nice home, settle down and just relax.

**tS:** What?!



**AB:** Yeah. Playing football is my purpose, but I don't think I can take it anymore. There's simply too many fouls against me every game, to the point where I think they're physically abusing me on purpose. The ref does nothing about it. I'm getting hurt here, and I'm pretty sure they'll replace me with someone newer and younger by the end of the World Cup. They never take my well-being into consideration; it's as if I'm just a tool used by them to win.

**tS:** Wow, that's terrible! How could they do this to the MVP? Have you talked to anyone about it?

**AB:** I've tried, but the only time I see them is on the field. Once the game is done and they no longer need me, they just shove me into a dark box all by myself...

*[AB begins sobbing.]*

**tS:** This is unreal. Let me help you get out of here.

**AB:** You... you'll do that for me? I've never-

**Scary Sounding Man:** HEY. OPEN UP. GIVE BRAZUCA BACK. WE HAVE A GAME TO PLAY.

**AB:** Oh no! They're coming for me!

*[Scary Sounding Man kicks down the door.]*

**Scary Sounding and Looking Man:** WHO THE FUCK ARE YOU? HOW DID YOU GET IN HERE? WHY DO YOU HAVE NO PANTS ON?

**tS:** I WON'T LET YOU HURT HIM! THIS IS WRONG!

*[More Scary Sounding and Looking Men enter the room, subdue me, and grab Mr. Brazuca.]*

**AB:** HELP ME theSMURF! HEL—

I don't know what happened after that, as something hit me and I lost consciousness. I woke up in a Brazilian jail and I had to get bailed out by the editors. They seemed very disappointed in me, and no one believed me or the plight of Mr. Brazuca. I tried to start a non-profit organization to free him, but people just laughed at me. How can you people support an organization that treats its most valuable assets in such a way? You people are fucking sick.

theSMURF

**I like trains. \(\^ \Delta ^\)/  
Traiiiiiiiiins...**

## Europa Universalis IV, Cooling Off Between Midterms

Like many, if not most, I've had an alarming number of midterms in a very short period of time these past two weeks. To keep my sanity, I've been taking breaks between intense study periods to try my hand at world domination, playing as Japan. Japan starts as many warring states subservient to the emperor. This is surprisingly frustrating, since you can't annex vassals that are at war, and since they are constantly at war with each other with only brief periods of peace in between. So all you have to do is pick a specific state, get them to like you, wait until they're not at war, and then integrate them.

Oh, but they hate you. Why? Because they want your land and they want to be independent and they have a hostile attitude towards you at all times. So integrating them takes good timing. To add to this, by integrating a state, the others hate you even more since they feel threatened by it.

At the start of the game, there were nine states. Luckily, after continuous warring this went down to six, which I was able to integrate over a 50 year period, successfully unifying Japan! Now that Japan was stable, my desire turned towards the Asian continent, specifically Korea, Manchuria and Ming. Korea and Manchu were best buds at this point, and both considered Ming an enemy, so using "the enemy of my most immediate enemy is my friend" logic, I worked to become allies with Ming and pulled them into a war. They did this less than a month after the alliance was cemented. (Sometimes the AI is really bloodthirsty and just waiting for an excuse for a bloodbath).

The war was short, and from it came the dissolution of the Manchu-Korea alliance and some provinces changing hands, namely Japan getting a province on the continent. Five years later, after the expiration of the peace treaty, Japan successfully vassalized Korea — but before I could do the same to Machu, Oirat beat me to it! Didn't they get the memo? Only *I'm* allowed to ruthlessly expand! So off to war with Oirat the Japanese soldiers went and after a while Manchu fell in line under its benevolent overlords. Over time, it and Korea would be integrated for the glory of Imperial Japan and then used as a base for the righteous war against the Chinese states.

I say Chinese states now because due to external pressure (I was paying a lot of money supporting rebels), Ming had experienced a long period of instability cumulating in the formation of the Zhou nation in its south-western most provinces. Zhou and Japan quickly became best buds and started endless wars against Ming until they were but a shadow of a great power. They were eventually small enough to be vassalized after another nation, the Shun broke away in the northern parts not controlled by Japan. The problem was now Zhou and Japan had borders that touched and I found that very offensive since my borders shouldn't touch anyone else's. There should be only one country! Japan! Zhou had to go...

So Zhou, due to external pressure (I was paying a lot of money supporting rebels), experienced a long period of instability cumulating in the formation of the Xi nation which was quickly

annexed by Japan. It was almost as if I had planned it that way... A few wars with Zhou later and their land was returned to its rightful owner, the Ming, who were subsequently annexed by Japan. Oops. Also, through wars with Shun and Oirat, Japan was becoming a sprawling Eastern super power.

Realizing that the desire to expand was greater than the number of neighbours Japan had, the supreme overlords started a colonization effort early on. Japan started eating up countries like Brunei, as well as sending colonists throughout the Philippines, the East Indies and eventually Australasia. The surge in the population of those who considered themselves Japanese in the colonies greatly helped offset the dissatisfaction felt by those in Japanese Continental Asia over silly things like lack of freedom, harsh treatment, their culture not being accepted, having a new religion forced upon them, and being forced to kill their neighbours that they actually liked more than their overlords. You know, silly things.

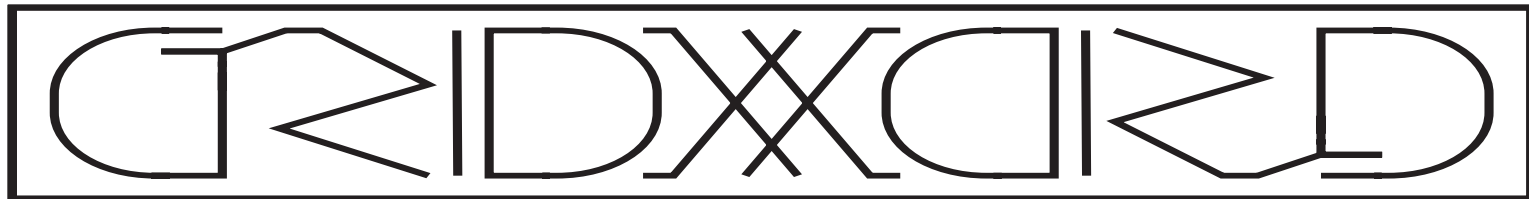
Everything was going so well for Japan as through sheer luck it got personal unions with Tibet and Ayutthaya. Japan then set its sights on Oirat to ensure that it was freed from independence and could become a part of the Japanese empire. One problem though: Russia had beaten me to it. They'd attacked Oirat and made huge territorial gains. They'd also been constantly sending colonists further and further east in an endeavour to reach the Pacific. This would not do. There is room for only one glorious empire in the east and it will not be Russian! Mustering a truly monumental army, the Japanese attacked Russia to drive them back west. At first things went well. Japan took control of more and more provinces and the Russian army hadn't even shown up! Spurred on by this success, the Japanese advanced further west and further north to force the Russians to cede more territory. But then winter came.

This is the first game where I've really experienced the whole "don't invade Russia in the winter." In other games, there is a slight inconvenience caused more from the sheer size of the Russian territory being invaded than the weather. But what happened was truly horrific; half of all the Japanese soldiers froze to death. They were in the northern hostile territory and very little reinforcements and supplies made it through to them. Then as spring began the Russians counter-attacked against the weak Japanese armies winning more than their share of battles and inflicting huge casualties. Just as my armies were able to regroup and start to push back, winter fell again and I was forced to retreat out of Russia until the following spring. Retreat! I actually retreated! We eventually won the war but took much less territory than we initially wanted.

So, Japan and Russia are at peace for five years now and will probably be at war as soon as possible since I can definitely win a winter war in Russia. I just got a little unlucky the first time.

I'm going to study for more midterms now.

Stubbs



## gridCOMMENTS

*Ballin'*

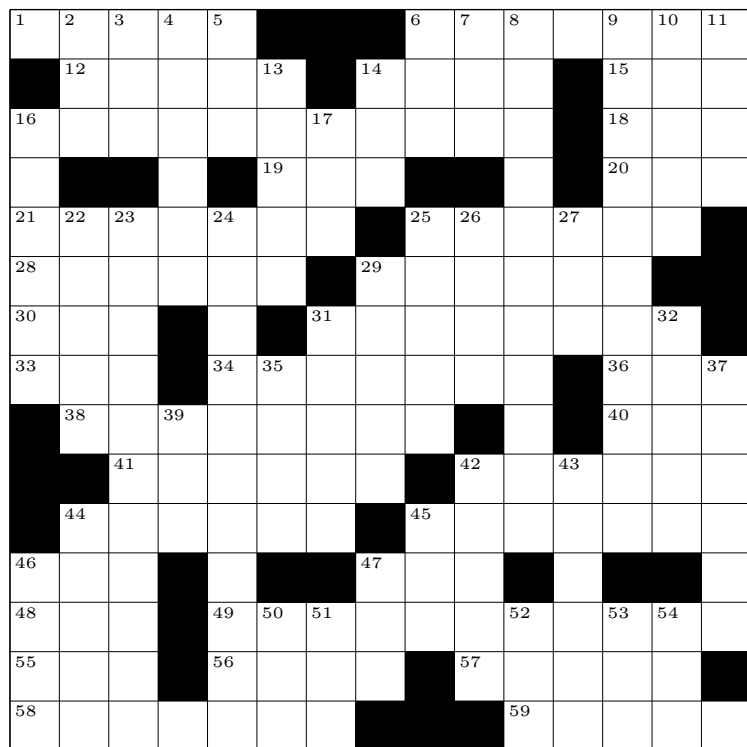
Midterms and the World Cup are upon us, so this grid's got twelve more black squares than last time.

The perfect:imperfect ratio was 7:4. The common blunder was TACIT/RIE for TACET/REE; the former is a musical term (Jenny) while the latter is an old word related to "raw". A notable, alas ineligible, answer to last issue's *gridQUESTION* ("If the egg fountain hatched, what would come out?") was "a baby MC" from an unsigned one of the four. Among the correct grids were answers like "lots and lots of Imprint" (Kevin), "a thoroughly stoned chicken" (Daniel), "infinitely many primes" (Michael), and "a slightly smaller egg fountain" (Travis). Ramesh suggested a flying thing too quick to see. Rob's answer ("Nothing is certain in science!") isn't funny anymore. The one that made me laugh the most was Abraham's drawing of a Goosezilla ("HISS") with soulless eyes and a banana for scale. So congratulations, Abraham! You may pick up your prize at MathSOC.

Submit your grids to the **BLACK BOX** (by the Comfy Lounge on MC 3<sup>rd</sup> floor) by 18:30 on Monday July 7<sup>th</sup>. Include your name and your answer to this issue's *gridQUESTION*—the correct answer decides the winner (of a \$5 C&D gift card) in the event of a tie: "Who will win the World Cup?"

Cheers,  
unit

## This Week's Grid:



## gridWORD Clues

*Across:*

1. ¢
6. Principal dancers
12. Fr
14. Arabic prince
15. Wood after fire
16. Ship gossip
18. Canada's bedfellow
19. Abbreviated arbitrageur
20. Badger
21.  $\Theta \neq n\pi/2$
25. Sanguinary
28. Substernal sun?
29. Goalie
30. Little dog
31. Two-optioned
33. Be human
34. Ejected!
36. Soft \_\_\_ (shoe shop)
38. 50s "hipsters"
40. Battery size
41. Soccer shoes (synecdoche)
42. Sleeping sickness vector
44. Eddies
45. Dalí, van Gogh, Picasso
46. III
47. Domain name
48. Romanian dollar
49. More fit to fly
55. Pretty pot
56. This
57. Outlandish
58. Camping cookware and cutlery
59. Library ledge

*Down:*

2. Always on, slightly off
3. Despicable Felonius
4. Womb
5. Emmet
6. Green-egg layer
7. Great or blue, e.g.
8. Musculoskeletal surgeon
9. Coin washes
10. Highschool hackwork
11. Bang
13. Santa \_\_\_\_
14. Water waning
16. Tourist trap?
17. Before
22. Jacket jotting
23. Fairy cobbler
24. Refund?
25.  $\beta \beta \beta$
26. Annealing kiln
27. \_\_\_ the ramparts
29. Boots
31. Blue-pencils
32. Grill
35. An aldehyde
37. Old Julius
39. Disney prince
42. Hub of Nova Scotia
43.  $\frac{1}{8}$
44. Oû
45. Fuss
46. Skid row
47. Female sheep
50. River in China and Kazakhstan
51. Ungulate mating period
52. Tucson airport code
53. Crossness
54. Adult elver

Submit your *profQUOTES*, anti-*profQUOTES*, grid solutions, and speedruns to the **BLACK BOX** on the third floor MC!