

“WHAT IS YOUR FAVOURITE FOOD FROM YOUR CULTURE/HERITAGE?”

你hao 大house-slimes,

How're you doing with the heat? I'll bring out my inner *barkED*: make sure to stay hydrated, dress lighter, and to *put on your sunscreen!* Canada Day was kinda bad, there were some ominous ass clouds but with like, no rain. I was surprised — Kitchener-Waterloo is always storming horribly and I thought it wouldn't be able to resist literally raining on people's parades. It didn't, but you know where did? Ottawa. They had to cancel everything because it was flooding 'n thundering 'n shit. Really—the only good thing about it is *Heated Rivalry*.*

*Answer key: 1) No 2) Wow! That sounds intriguing!

Well, anyways. Maybe you're studying for your last few midterms. Maybe you're procrastinating. Why not learn something new? Do *you* know what a rick-a-bamboo is? What're your thoughts on reading author beef that's spanned roughly three issues?*

*Answer key: 1) No 2) Wow! That sounds intriguing!

Great! Let's get on with it. It's also a great way of distracting yourself from the horrific effects of climate change :DDDDDD coolest summer ever guys :DDDDDDDDDDDDDDDDDDDDDDDD

Hey, have you guys watched *Project Hail Mary*? You really should. It's great. It has Ryan Gosling (who unfortunately does not pop his ass but he does pop his biceps I think) and space and silly creature named Rocky and I cried for about half of the movie. It's not in theatres anymore but when has that ever stopped *anyone* with access to technology? *cough* 🗨️ *cough*

I think that's enough now. Gotta get back to fluid mechanics. I've got an assignment due at 6 p.m. that I haven't started. See you guys next issue!

LOL (lots of love),

maj1ckED
Editor, mathNEWS

contentED
Editor, mathNEWS

FRIED RICE	Nasi Lemak
RAPIDEYEMOVEMENT	plov, polo, pulao, pilau, pilaf, plovas, polo, fulao, osh, aş, or any of its other names
MRBLLUESKY	Chicken Parm/Pizza/Gnocchi
FINGERSINSOCKETS	xiao long bao and sheng jian bao (i wish there were more shanghai food here)
LA MIAN	snowdozer
STRATUS	Aloo zereshk 🍷 (stew with barberries and plums)
QUAAAAAACK	Pickles Beets or Popcorn with Butter, Salt and Nutritional Yeast (yes, the movie theatres serve this)
DICK SMITHERS	Tortellini
DICK SMITHERS (REAL ANSWER)	Lazeez
GOLGOTHASTERROR	bánh da lợn
SMALLMOUTHBASSHATER	petahе and kutia
CIRCLED RANCH	Date squares! They're incredibly easy to make. Include molasses in the date paste for Gaspésie flair
NIGHTDEER	Haleem
BIG WEENER	Lasagna
LIGHTSOUT	Peameal bacon
CJ	Newfoundland trifle
ABSTRACTED	Rajma chawal
BARKED	Borshcht
CONTENTED	idli sambar

ARTICLE OF THE ISSUE

This issue's AOTI is *circled ranch's* *Now, What Is That?*. It evokes dear childhood memories, discusses Canadian military history, and contains some very valuable advice for future seafarers. An absolute *circled ranch* classic. Come pick up your prize in MC 3030 :)

I keep getting these reels of badass Pokémon smoking cigarettes or trying to die.

ALEX LAVALLEE, mathNEWS EDITOR FOR SPRING 2026
ALONG WITH SARA NAYAR, NOAH NAZARETH,
MADIHA MANSOOR, SASHA NOVIKOV AND TOM SI

mathASKS 161.4

FEATURING PROFESSOR BURCU KARABINA

YUANFEN: CAN YOU SHARE AN EASY TURKISH RECIPE WITH US THAT WE LOW-KITCHEN-SKILL STUDENTS CAN MAKE?

Lazy manti! (Manti is a traditional Turkish dish, very tiny dumplings filled with seasoned minced beef and served with garlic yogurt, takes hours to make, here is the lazy version.)

PREPARATION:

1. Cut the tortillas into small squares, spray them with a little olive oil, toast them in a pan until crispy.
2. Mix some plain yogurt with garlic salt (or minced garlic).
3. Melt some butter with crushed red pepper flakes.

TIME TO SERVE:

Place the crispy tortillas on a plate, cover them with the garlic yogurt mix, and drizzle the butter sauce on top.

SMALLMOUTHBASSHATER: FAVOURITE FISH?

I hated fish, any kind of seafood really until I was 30ish. Now, I could eat salmon everyday but I like it plain, maybe a little lemon but that's it. No sauce on my fish, please!

ANONYMOUS CALLER: HOW MUCH WOOD WOULD A WOODCHUCK CHUCK IF A WOODCHUCK COULD CHUCK WOOD?

I guess as much wood as a woodchuck could chuck. Hmm, as Dan (Wolczuk) would say, it depends.

SUDOKUENJOYER: WHAT'S YOUR FAVORITE COURSE TO TEACH? LEAST FAVOURITE COURSE?

Assuming no profs read this, MATH 138 content is my least favourite. I like the integrals parts but infinite sums don't really excite me as much.

On the other hand, I love teaching MATH 137 and MATH 237, and explaining the geometric interpretations/intuitions behind the algebraic expressions.

NAZZ: WHY SHOULD EVERYONE GO TO THE MATH TUTORING CENTRE?

There are many reasons but here are just a few:

If you are struggling with your 1st and 2nd year core math, they can help and provide guidance.

If you are doing well, they can help you further your thinking. There is always the next level in math and we have amazing tutors who can challenge you to new ways of thinking.

If you are somewhere in between, they can help you figure out where you are at.

They also offer virtual tutoring.

VOLCANOTRICERATOPS : WHAT WAS THE TRANSITION LIKE FROM BEING A MASTER'S STUDENT HERE TO BEING A PROFESSOR?

I have been very fortunate because, during my Master's degree, I was offered an online TA position. I absolutely fell in love with the possibilities that online teaching/learning can offer. That experience opened many doors for me and ever since then I have had a growing interest in digital pedagogies, course designs, and designing digital learning experiences for different teaching modalities. Many strategies I use in the classroom today are inspired by lessons I learned while designing online courses. One of the most important things that I learned during the transition from student to professor was that learning never really stops. I continue to learn something from my students every term, and I regularly take classes and attend workshops and seminars myself to stay connected to the student and learning experience. In a way, I never left behind being a student.

LEAH: WHAT IS YOUR FAVOURITE PART OF RUNNING PIZZA PIAZZAS?

Having chats and doing arts and crafts with students; talking to students about what the next Pizza Piazza should be about and seeing their creative sides. But what I love most about it now is that it has grown to the point where the students have taken ownership and are now the ones running it!

LEAH: HAVE YOU NOTICED ANY CHANGES IN THE DIVERSITY OF MATH STUDENTS SINCE YOUR UNDERGRADUATE YEARS?

Indeed! When I was an undergraduate student, there were relatively few people from underrepresented communities in mathematics. Over the years, we have noticed a meaningful increase in the diversity of students entering the field. But there is still more work to be done. One thing we need to keep in mind: We need diversity in our field in many dimensions such as thought, experience, and perspective as well.

LEAH: WHAT DO YOU MISS FROM STUDYING IN TURKEY?

My friends!

LEAH: WHAT WAS YOUR FAVOURITE CLASS OF UNDERGRAD?

Number Theory. I eat my corn on the cob one row at a time.

🍏 LOVER: WHAT ADVICE DO YOU HAVE FOR UNDERGRADS?

Try everything! Different clubs, different groups of friends, different restaurants, different courses, different study patterns, different opportunities. As busy as life may seem right now, it only gets busier later on. Explore who you are, discover what excites you, learn more about yourself, and

chase your dreams. Figuring out what does not work for you is just as valuable as discovering what carries you forward in life. University is a lot more than just academics. Strive for a balanced life.

🍏 **LOVER: WHAT MADE YOU DECIDE ON PMATH ?**

Well, as the name suggests, it is “pure” math :) I love the heights of the abstraction and the depth of the thinking it demands.

🍏 **LOVER: WHAT IS YOUR FAVOURITE RESTAURANT IN WLOO?**

Ken Sushi. It’s our weekly family restaurant.

🍏 **LOVER: WHAT IS YOUR FAVOURITE THEOREM?**

Fermat’s Little Theorem. I find it very elegant.

SUNRISE PARABELLUM: WHAT IS ONE FUN FACT ABOUT YOU?

I have been practicing yoga for many, many years now but I started Bikram Yoga a few years ago.

It’s a 26-pose sequence practiced in a heated room (40°C with 40% humidity).

Every class follows the exact same ninety-minute sequence, with twenty-six poses, each repeated twice.

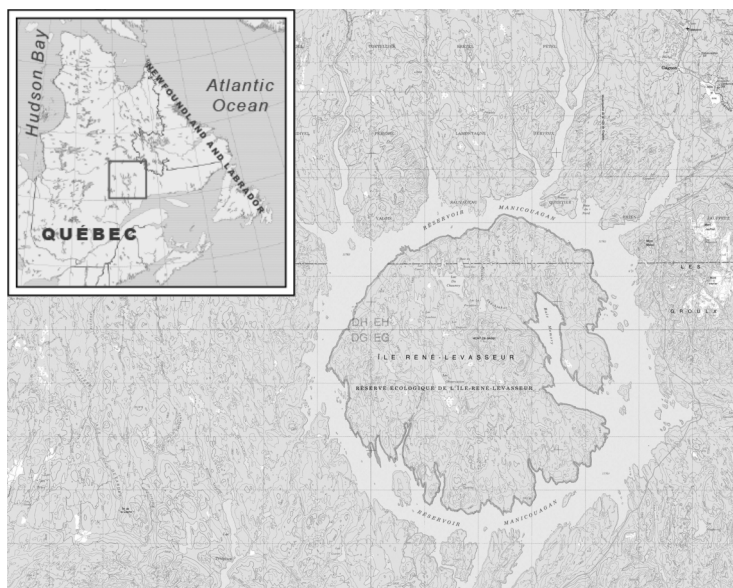
At first, I thought it was very boring because I thought nothing ever changes, but then I became hooked after realizing the only variable in the game is me.

As rigid as it sounds, it taught me very valuable lessons about being flexible in life. I’ll keep the lecture to myself :)

But who knew that ninety minutes of physical discomfort can teach you so much about personal growth!

N ISLAND FACTS — RENÉ-LEVASSEUR ISLAND

I’ve got a big island for you this week. In fact, I’m fairly certain it’s bigger than every other island I’ve covered so far combined (several times over). It’s my pleasure to introduce to you the massive René-Levasseur Island.



- A very large island within a lake in Northern Quebec (roughly 1247 kilometres northeast of **mathNEWS**).
- Coming in at a whopping 2000 square kilometres, René-Levasseur is the world’s second largest lake-based island (right behind Manitoulin island, in Ontario). In terms of surface area this island is larger than the lake that contains it.
- The island is a near perfect circle, inside a nearly circular lake, and its highest point is Mount Babel

in the dead centre of it. If this thing was on a fantasy world map, people would call it unrealistic.

- It’s often called the ‘Eye of Quebec.’ Look up some photos of it from space, you’ll see why.
- The unique layout of the island is a result of its unique origin: a meteorite impact.
- A little over 200 million years ago, René-Levasseur was formed by a 5 kilometre wide meteor slamming into Pangaea, creating the fifth largest known impact crater on Earth. Some large impacts can result in ‘complex craters’ like this one, where the centre of the impact rebounds upwards and becomes higher than the surrounding land (hence the island).
- Up until the ‘60s, the island actually didn’t exist at all, instead there were just two semi-circular lakes which nearly touched, lake Mouchalagane and lake Manicouagan (whoever gave the two giant side-by-side lakes such similar looking names should be banned from lake naming). It wasn’t until a hydroelectric plant was built and water levels rose that the two lakes joined and created the island.
- Since the early 2000s, the island has been the subject of ongoing campaigns and legal battles, both by first nations and environmental protection groups, to protect it from logging.

That’s all on this island, let me know if you have an island you want me to cover (fatcullen2@gmail.com).



ANDREW GIBSON GETS SOLD TO SHREK DIRECTION

THIS IS AN ARTICLE MADE OUT OF LOVE. NO OFFENSE INTENDED.

Andrew woke up on a sunny morning, the sun shining through his blinds. He knew today was going to be a good day.

He sat up right, kissed the Shrek Direction poster above his bed frame, and sauntered down the stairs to find his parents sitting ominously at his kitchen table.

Wow. In his thirty-something years of life, he'd never before seen his parents so serious.

"Hey mom, dad, what brings you here?" he asked. His parents never visited without prior notice.

"Son, sit down. We need to talk."

Andrew gulped and shuffled towards the chairs.

"Andrew... You know how recently we've been tight with money?" his dad asked calmly.

Oh dear.

"And how your favourite band, Shrek Direction, has been looking for a new member to replace Zayn Shrelik?" his mom added.

Wait.

"So they recently contacted us, and offered us big money to buy you, son," she said, beginning to tear up. "And we refused at first, but then they—" sobs wracked her frame, "They threatened to have your father and I blacklisted from any place where we attempt to get a job!"

Tears streamed down her face, her husband embracing her, running his hand up and down her back.

"Son, we just want you to know this wasn't an easy decision—"

"YES!!!" Andrew exclaimed, interrupting his father, his chair clattering onto the floor from the force of him standing up. "YES YES YES I'VE BEEN WAITING FOR THIS FOR MY WHOLE LIFE!" he shouted, pumping his fists up and down.

"...What?" His father could only stare dumfounded.

"MOM, DAD, I HAVE NEVER BEEN MORE GRATEFUL TO BE YOUR SON! I'M SO GLAD FOR MY FACE, MY CHARMS, MY STRIKING PERSONALITY THAT HAS ATTRACTED THESE BEAUTIFUL OGRES TO COVET ME!!" Andrew threw his arms out wide. "AND NOW, ON THIS DAY, IT HAS FINALLY BECOME WORTH IT. I'VE FINALLY, **FINALLY**, BEEN GIVEN THE CHANCE TO JOIN MY FAVOURITE BAND!!"

At this point, his mother had already stopped crying, her sobs reduced to hiccups. "Sweetie, what are you talking about?"

"Mother dearest, cry no more. You've done incredible things for your son here. Today he will fulfill his destiny to become the center of the Shrek harem!"

"Boy, what—"

"Shhhh, father, you needn't say more," the Economics professor said, skipping towards the front door. "I will make you proud, my favourite life givers." He opened the door. "Adios." *Slam.*



Well, despite his fancy exit, he wasn't quite sure *how* he was going to get to those hunks, Shrek Direction. *Buuut*, he was far too embarrassed to go back, so he continued to walk.

"Hey, you're Andrew Gibson, right?" called a voice, smooth like velvet.

A green hand appeared on his shoulder, giving it a good squeeze.

Oh my god, oh my god.

"HEY—" Andrew cleared his throat and swallowed his excitement. "Hi. Omg, hello. I'm Andrew Gibson yeah. So honoured..." He couldn't think clearly with an ogre as handsome as Harry Shryles so close he could feel his breath on his nape.

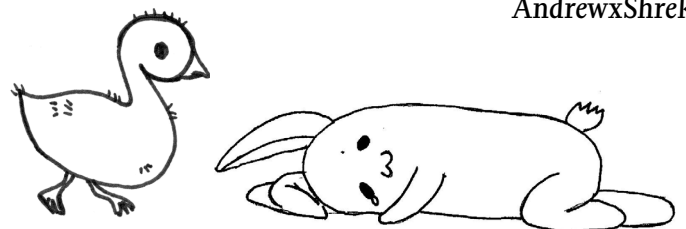
"I think you should take a breath before anything else, princess. Ride with us in our limo, have some time to calm down first."

Andrew turned around to find—"Niall HoShrek, Liam Shrayne, Louis TomlinShrek?!" All in their pudgy, green, handsome ogre glory.

"Hey," they all said, casually.

At their voices, Andrew's knees gave out completely, and before he could hit the ground, a pair of strong arms swept him into a princess carry. He felt the blood rushing through his ears as he was carried into their giant limousine with red cushy seats.

He couldn't help it; he blacked out.



AndrewxShrekOTP

THE STRANGE WAY KIDDOS THINK

Despite the limited thinking capacity I had as a child, I still constantly thought about random things and ran my brain CPU on overdrive for almost all my waking hours. I was also that obnoxious 5-year-old always asking, “why this, why that” questions.

When people say kids have wild imaginations, I think that’s partially because kids’ logic and ways of thinking aren’t as constrained by norms. This can include social norms, such as expecting others to behave a certain way in social situations; physical intuitions such as expecting a glass cup to shatter when it falls off the counter; and overall, not really understanding the cause and effect of what’s going on in their surroundings or the consequences of their actions. This leads to some of the wildest thoughts. I would love to hear yours, and I shall contribute some of mine as an example.

My parents often drove me around, back when I was but a wee little toddler. I always noticed that the turn lights would start flickering whenever the car was about to change lanes or make a turn towards the indicated direction. I initially had the correct thought that the driver (either mom or dad) was the one flicking a switch; however, I never saw them flick the steering stalk behind the wheel because I was too short and always sat at the back. Because of this, I started wondering “How does the car know when the driver wants to turn?” I started theorizing that maybe the car just predicted the turns based on tiny movements made with the wheel; or perhaps the car had some sort of unconventional way of receiving some form of communication signals from the driver. I even observed different drivers but still couldn’t figure it out. It only took a few years for me to somehow realize that there was a lever behind the wheel.

The thing with little toddler me is that I never thought to use what adults would call “common sense.” I never thought to take a peek behind the wheel, or just ask my parents, or maybe even sneak onto the driver’s seat myself and check.

Here’s another misconception I had as a child, which makes for a funny little story:

I always hated lunch naps as a kindergartner, and the beds we used were little wooden trays that would creak whenever we shifted while lying on them. On the first day of class, the teacher informed the class to “not move around” during lunch naps, by which she meant to not *shift around* (and thereby make a lot of noise). However, because the Chinese word for “move” and “shift around” are the same character, I interpreted that as “DO NOT MOVE.” I was afraid they’d notice my belly moving up and down beneath the blankets while breathing, and because I was deathly afraid of the teacher’s scolding, I’d put my hands up like a tent, cover them with my blanket, and hold that position for 1.5 hours every time. I’d even ask for washroom breaks just for a chance to ask her if I could breathe or not, to which she would give an answer I couldn’t understand, and I’d hold back my tears of frustration while walking back to my wooden tray. Needless to say, I never slept

a wink during the three years I had her as my kindergarten teacher.

The common sense of, “the teacher ain’t gonna be that strict” never really occurred to me as a little kid. What adults said seemed like absolute law to me.

The third little tidbit I wanted to share was a thought I sometimes had back in first grade about China’s “one-child policy.” Back then, I knew a few things: adults take care of old people, and children grow up to be adults. And one day, I just had a random thought: “If mommy and daddy have one child, and that child grows up to become a mommy or daddy, and they only have one child, doesn’t that mean we’ll have a lot fewer adults by the time I’m an adult? How are people my age going to take care of all the grandmas? Do we just have to do more work? Oh well, I’m sure that’s not gonna happen.”

Of course, the language I used to phrase that thought back then was very simple, but it did convey that even a kid can conceptualize demographic collapse. But at the same time, the child me couldn’t associate cause with effect and just thought things would just be okay. I couldn’t ever fathom that the usual everyday life would ever change much, or that our generation needing to work harder would ever become a reality.

I volunteered as a teacher’s assistant for quite a few years, and have seen many cases of kids coming to the strangest conclusions and wholeheartedly believing in them. For instance, worrying about the most inconsequential problems that, by adult standards, are easily solved; or absolutely refusing to perform a small task due to a minor inconvenience. I find this to happen more commonly with neurodivergent kids but it could happen with almost all children.

Anyhow, I’m curious about your thoughts or stories, make sure to let me know!

Ginger Ryesaki

This article is the full version this time as well! If you have any comments or questions, feel free to email me at g2731i@uwaterloo.ca or text me on discord: ryesaki

KINDERGARTNERS LEARNING TO COUNT FOR THE FIRST TIME

So THAT’S where 6 7 comes from!

snowdozer

cumcQUOTES

UOFT DEPT. OF STATISTICAL SCIENCES: PROF. JEFFREY S. ROSENTHAL

“ There’s this character, Sleeping Beauty, I don’t really know why it’s her, I guess because she sleeps.

MCMASTER UNIVERSITY DEPT. OF MATHEMATICS AND STATISTICS: DR. GIULIA GAGGERO

“ Not so many years ago—although some of you were probably not born, so maybe many years ago.

UBC STUDENT: EMMA KINSELLA

“ If you have a guitar, and you extend it infinitely ∞ that way, and infinitely ∞ that way, and you have your fingers, and you extend your fingers infinitely ∞ that way, and infinitely ∞ that way, what sound does it make?

“ *doing the right hand rule* Sorry, my hand doesn’t extend into infinite dimensions, only three dimensions.

UWATERLOO STUDENT: MICHAEL ALEXANDER

“ When you give someone drugs, you want to know what that’s doing to their body.

ST. FRANCIS XAVIER UNIVERSITY STUDENT: CHRISTOPHER RICHARD

“ If you’re really good at noticing patterns, which you probably are, you can figure out where Vancouver is.

WESTERN UNIVERSITY DEPT. OF MATHEMATICS: DR. TAYLOR BRYSIWICZ

“ None of them are humorous, honestly. It’s just a bunch of polynomials.

UWATERLOO DEPT. OF PURE MATHEMATICS: PROF. NICO SPRONK

“ Thank you Stewart! I love these boards.

UOFT DEPT. OF MATHEMATICS: PROF. DROR BAR-NATAN, UOFT

“ I want to do my computation on a computer.

“ Theorem. What is a theorem? Well it’s a theorem with the T replaced by F, meaning it’s false.

“ This is the most complicated and it actually requires high school algebra.

“ Your high school friend can tell you that $1 - T$ is the same as $(1 - T)^2 + T(1 - T)$. In fact, a similar computation

shows that $T(1 - T)$ is the same as $(1 - T)T$, and T^2 is the same as T^2 .

“ Maybe I’m not really a mathematician. But I am an algebraist, and algebra doesn’t care.

“ It is known that it is false. Actually, I lied. It is known at the level of a conjecture.

“ When I was a graduate student, [...] I was looking down on knot theory. Knot theory is silly [...] I was wrong. Knot theory is more like number theory. So numbers are also silly.

“ 23 times 29, it is equal to... who cares, 600 something. [Author’s note: it’s 667]

“ I’m not an algebraist. In fact I’m only an algebraist for the purpose of this talk.

“ It’s not invariant. Not as in N-O-T.

RapidEyeMovement

N THINGS I LEARNED AT THE CANADIAN UNDERGRADUATE MATHEMATICS CONFERENCE

- Web-based audience polling software sucks
- It’s hard to get data from people addicted to opioids
- Basically all of quantum mechanics (trust me bro)
- Don’t expect much from conference food
- On the other hand Ethiopian food is very tasty
- $T^2 = T^2$
- UW is actually quite unusual

hyperlynx



A M EDITOR

ONPLS 2026 OVERVIEW

On June 1st 2026, the Ontario Programming Languages Seminar (ONPLS) was held at McMaster University, bringing together individuals to share their knowledge and progress on programming languages research. The talks spanned a wide range of topics, from type theory, to new programming paradigms, to implementation specifics.

There's a talk for everyone, whether you prefer a more mathematical approach to prove properties of systems, or you take a more practical approach to build new features onto existing languages. Before getting into the talks, I apologise in advance if I couldn't quite understand the concept. The abstracts are linked below.¹

GENERATING HUMAN-READABLE CODE—JASON BALACI, MCMASTER UNIVERSITY

Code and documentation often diverge from each other. Let's consider only the problem description, then use Drasil to produce documentation and code. The approach seems related to other agentic frameworks, except it uses a more structured approach.²

HIGH-LEVEL OPTIMIZATION OF ABSTRACT DATA TYPES—ANTHONY HUNT, MCMASTER UNIVERSITY

$(S \cup T) \cap V$ could be rewritten to $(S \cap V) \cup (T \cap V)$, with different tradeoffs. Some of the work presented here reminded me of logic programming from CS 442.

STAGING MODULE FUNCTORS—MAITE KRAMARZ, UNIVERSITY OF TORONTO

Macros generate code (eg. `pow(x, 3)` turns into `multiply(multiply(x, x), x)`). OCaml functors operate on modules (modules are like class definitions). Macros in functors are tricky: if `x` in `pow(x, 3)` is actually a module definition, it actually represents something completely different. This leads to the concept of "stages," where a macro cannot use the value of an argument until the stage where `x` is known. See `MacoCaml` for more.

BORROWABILITY AS A RESOURCE—A CORE CALCULUS FOR RUST-STYLE BORROWING: YANNING CHEN, UNIVERSITY OF TORONTO

There is a rich literature on linear types and region based memory management, but there is limited support for Rust-style borrowing. To make it work, we consider references to either be owned, mutable, immutable (shared borrow) or dropped. We also add operations for splitting capability to create another reference, and restoring lifetimes by consuming those split references.

RECORD TYPES EVERYWHERE—MATTHEW TOOHEY, UNIVERSITY OF TORONTO

Substitution is problematic: it can't be used in proof assistants and traversing terms is inefficient. An alternative is explicit environments, which are represented as a record type (identifier to value). If you model function calls as passing a record type, it naturally works for named arguments and partial application.

LESSONS FROM MECHANIZING CATEGORICAL LOGIC IN CUBICAL AGDA—STEVEN SCHAEFER, UNIVERSITY OF MICHIGAN

Presents `cubical-categorical-logic`, a library written in `cubical ada` for writing compositional metatheoretic proofs. It's based in category theory, with many words I don't know (sorry): presheaf, displayed category, reindex, fibrations, canonicity, freeness, transports.

MAKING DYNAMIC LANGUAGE OBJECT ENCODINGS MATTER—DAVE MASON, TORONTO METROPOLITAN UNIVERSITY

For dynamic types, the runtime has to look up the type of a value, so objects need to be tagged with a type. This tag consumes precious memory. Nowadays we have 64 bits per register, why not borrow some bits for the tag? Different encoding strategies are a tradeoff between making some types faster without hampering others too much.

TRANSITIONING TO EXPLICIT NULLS IN SCALA: ONE MUST IMAGINE NULLNESS SAFETY—HARRIS LAU, UNIVERSITY OF WATERLOO

Java always allows null (null is a subtype of all types). Transitioning to explicit nulls requires more than just changing the type system. Easy-to-use to correctness spectrum: `unsafeNulls`, `localized unsafeNulls`, `.not_null`, flow-sensitive typing, explicit null types.

MIKAN: A NEW PROOF ASSISTANT FOR CUBICAL TYPE THEORY—REED MULLANIX, MCMASTER UNIVERSITY

Dependent type theory has pain points (e.g. inductive identity type does not work well with negative types). Cubical type theory has path types, which play well with negative types. Mikan forks from `Cubical Agda` to focus specifically on cubical type theory.³

VIRTUALIZING CONTINUATIONS—CONG MA, UNIVERSITY OF WATERLOO

Multi-shot continuations allow us to "resume" execution at a specific point, over and over again. Effect handlers allow jumping up the stack to run some code, before resuming from where we left off. Effect handlers do stack switching, but multi-shot continuations do stack copying, which is incompatible. The trick is to make addresses have zone, handler, and stack offset information, which is translated to the correct handler.

MODULES IN C—ALVIN ZHANG, UNIVERSITY OF WATERLOO

C++20 modules doesn't allow cyclic imports, which blocks many C design patterns. C's grammar is context-sensitive, but it is possible to extract file scope names in order to generate the symbol table. Module system handles stitching together the needed declarations/definitions.⁴

CFORALL CONTAINER LIBRARY—MIKE BROOKS, UNIVERSITY OF WATERLOO

Adding libraries to handle linked lists, strings and arrays. Linked list implementations: wrapped reference list, wrapped value list, intrusive list. Strings use intrusive lists to avoid copying when possible. Arrays have bounds checking and implicit size communication.

EFFECT HANDLERS IN JAX—OGHENEVWOGAGA EBRESAFE, UNIVERSITY OF TORONTO

JAX is a purely functional language. Could we add effect handlers for extensibility? JAX has problems with continuations, but we can use JAX transformations to avoid materializing the continuation in many cases. Showed a neural network training loop with effect handlers, with performance essentially the same as manual implementation.

CHOREOGRAPHIC PROGRAMMING WITH EFFECT HANDLERS—MAX JUNG, UNIVERSITY OF WATERLOO

Choreographic programming is a kind of concurrent programming paradigm that aims to be deadlock-free by design. Effect handlers affect the control flow, so need to be careful to stay deadlock-free, reduce synchronization while allowing modularity. The try-block is found to have some restrictions, but the handler can be made to work with many different patterns.

COMPLETE LOCAL REASONING ABOUT PARAMETERIZED PROGRAMS OVER TOPOLOGIES—RUOTONG CHENG, UNIVERSITY OF TORONTO

Trying to verify algorithmic safety for infinite-state parameterized concurrent programs over different communication topologies. In general, infinite creates undecidability issues, but if we make reasonable assumptions about the underlying topology, we can reduce the problem to a set of local proofs. Demonstrated on multiple benchmarks on different topologies.

SaltOverflow

¹ <https://www.cas.mcmaster.ca/~carette/onpls2026.html>

² <https://github.com/JacquesCarette/Drasil>

³ <https://codeberg.org/11ab/mikan>

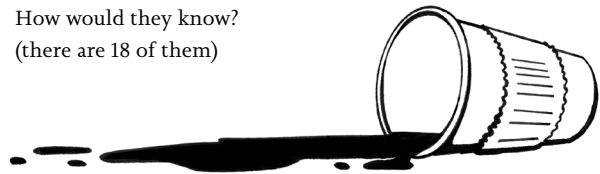
⁴ https://github.com/SaltOverflow/c-modules/tree/72a7b09/prototype_2

NOBODY'S GONNA KNOW

They're gonna know.

**SaltOverflow Imposter**

How would they know?
(there are 18 of them)

**ISSN 0705-0410****UW'S BASTION OF ERUDITE THOUGHT SINCE 1973**

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EVENTUALLY I WILL HAVE FREE TIME

Sometimes I want to

Write a worthwhile article

Sadly, my life calls.

Lars Nootbaar

SMALLMOUTH BASS

BEHIND YOU



I caught them for you <3

They said "I'm coming for your family next."

TotallyNotASmallmouthBass

to our resident smallmouthbasshater
also correct me if this isn't a smallmouth, I can't quite recall how large
the mouth was, but it made for a tasty lunch

THE LABEL ON THE EDGE.

*I'VE NEVER TAKEN GRAPH THEORY IN MY LIFE,
BUT YOU'D GET IT.*

I know I'm overcomplicating it.

I don't need to approach you asymptotically when I could just intersect.

You've already been meeting me halfway anyway. It's not a question of connection.

We're already part of each other's closed neighbourhoods.

$Me \in N(you). You \in N(Me).$

There is already an edge:

$Me - - - You.$

Adjacency isn't the problem. You've been right here by my side.

It's symmetric.
But the intention isn't.

And if I were honest — if I told you I like you —

I'd have to admit
the label on the edge between

$You - - - Me$ that reads: *friends*

has never been just friends.

Its weight has always been

> 1

from my side
the moment we met — and heavier since.

m1at4

I PROBABLY COULD HAVE FOUND FREE TIME IF IT WASN'T FOR MY PHONE

Sometimes my life calls

I'm distracted with my phone

I don't pick it up

Lars Nootbaar

HISTORICAL WAYS OF GETTING THROUGH GFW

富强民主文明和谐自由平等公正法治爱国敬业诚信友善

When I was a kid, my gamer friend told me that the “internet” in China is restricted. To access certain websites, I had to use special tools/software to climb across the firewall, aka 翻墙. I saw him open an app called Freegate, and then he started browsing YouTube and some pornographic websites to show off his wall-climbing skills. Out of curiosity, I also tried downloading Freegate on my PC, but was bombarded with malware installation links, ads, and random terrorist/extremist posters, and the speed was too slow. I didn't like the user experience and stopped using it.

Not long after doing some research, I found a much more reliable way to get through the wall: using GoAgent with Google App Engine. GoAgent is a GNU GPL open-source cross-platform network access software, and GAE provides a free proxy service to gain access to blocked information. There were plenty of tutorials on Chinese tech blogs to teach me how to set it up correctly, although I didn't know much about how the proxy service works on the GAE end. I had literally nothing to complain about as it worked perfectly! I could watch YouTube videos in 720p and play browser games without hassle. GAE free tier provides 10GB of data every month, so thanks to Google back then. After a few years, GoAgent was shut down, but XX-Net, a Chrome plugin that does the exact same thing, serves as an equivalent replacement.

Later on, my friends recommended me a more efficient way, which is to set up my own VPN/proxy server. The method is called 搭梯子, aka “building a stair.” Again, there were tons of tutorials online to walk me through the process. I picked Shadowsocks (or Shadowrocket on mobile) to connect to my server. There were also many choices on what VPS host to pick. Bandwagon was the cheapest, around \$20 a year in cost with a relatively fast connection. I also tried a few fancy choices like DigitalOcean and AWS EC2. However, when using my own VPN, the connection wasn't always stable. It might be related to the foreign IP bandwidth set by my internet service provider, because I found it much slower during work hours (assuming all foreign companies in China need VPNs to work). It might also relate to GFW rules on blocking/limiting internet traffic from a single foreign IP.

I don't think VPNs are being used widely in China, but they are popular with younger generations. Kids nowadays like to browse Steam, YouTube, AO3, or PornHub to sate different desires, and students need them for research and vibe-coding. Nowadays, I rarely need to use a VPN as I live in Canada, but when I travel back to China, I like to use popular VPN services like ExpressVPN or NordVPN. The advantage is that they provide a dynamic IP address for the proxy, so if one IP gets blocked, it can immediately switch to another one. The cost is around \$15 a month, so still a good deal on an occasional basis.

A funny story about the Tiananmen Massacre: I first learned about it in middle school when my fellow classmates talked about it in public. I was curious and learned more about what happened when browsing the internet. There were many

interesting threads about it on the Chinese social media 百度贴吧, the Reddit equivalent. 一九八四吧 aka “r/1984” was a popular one. Moreover, my high school and university teachers also mentioned the Tiananmen Massacre on an occasional basis, as if it was not an actual taboo. I don't think people will get in trouble for talking about it unless they try to, like by making a reel about it. I think people in China will remember it, as it currently works as reverse psychology. The more the government bans it, the more curious people get.

It was also not the last time things backfired. There were tons of protests against the quarantine policies during the late stage of the COVID-19 lockdown in China. The reputation of the Chinese government dropped a lot during that time. As to the future, I am not too sure, but I think the people in China will be wise enough to figure out the better course when it comes to a choice. They are smart people. Sometimes smarter than people under the beacon of democracy in terms of long-term planning and taking care of the environment.

ハンジエン

I'M NOT DOING TOO WELL.

I'm not doing too well.

It's not just burnout. It eats away at me with time. It forces me to reinvent myself at the whims of policy, whether the invention represents me or not. It forces me into an undying optimism, whether its object is realistic or not.

I've watched some of my proudest qualities be all but snuffed out by it. My greatest ambition has become to lead a peaceful life; anything more would be greedy. And that's one of the worst parts: I'm not just fading from my community, I'm fading from myself.

The angels at the gates of heaven can smell my hopes and fears. “How dare you believe in our lord? God's plan doesn't include you anymore.” And then they send me back down, and a thicker-pocketed believer takes my place. Whatever advances God's plan.

Any sane person would move on but I have too great a capacity for love. If God's plan is to wash me away, I will let it rain down on me.

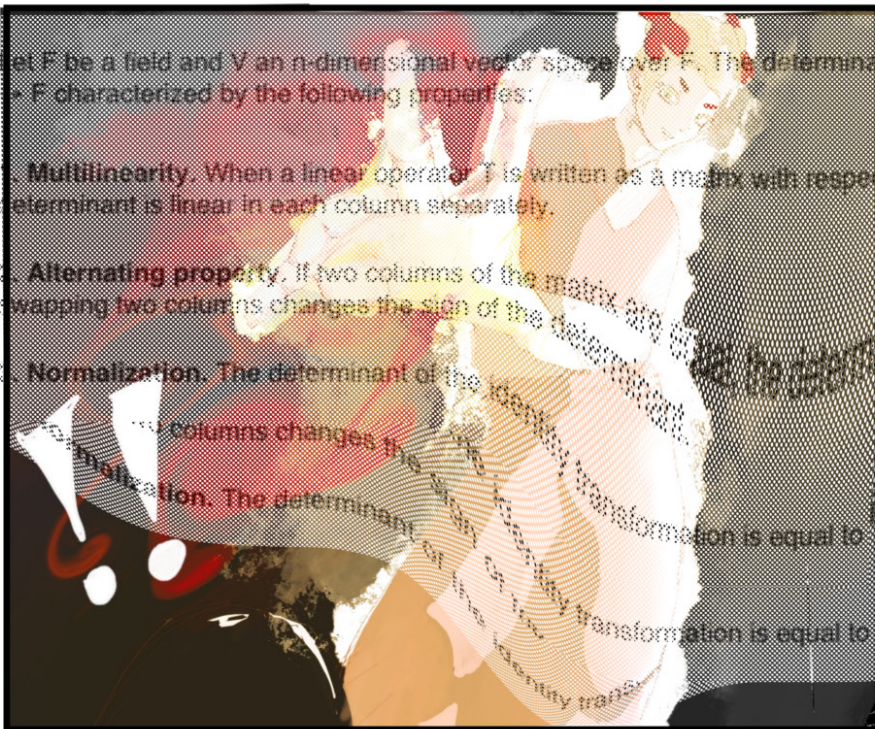
“... and they repeat the same hollow lies to the next person who will fill your seat.”

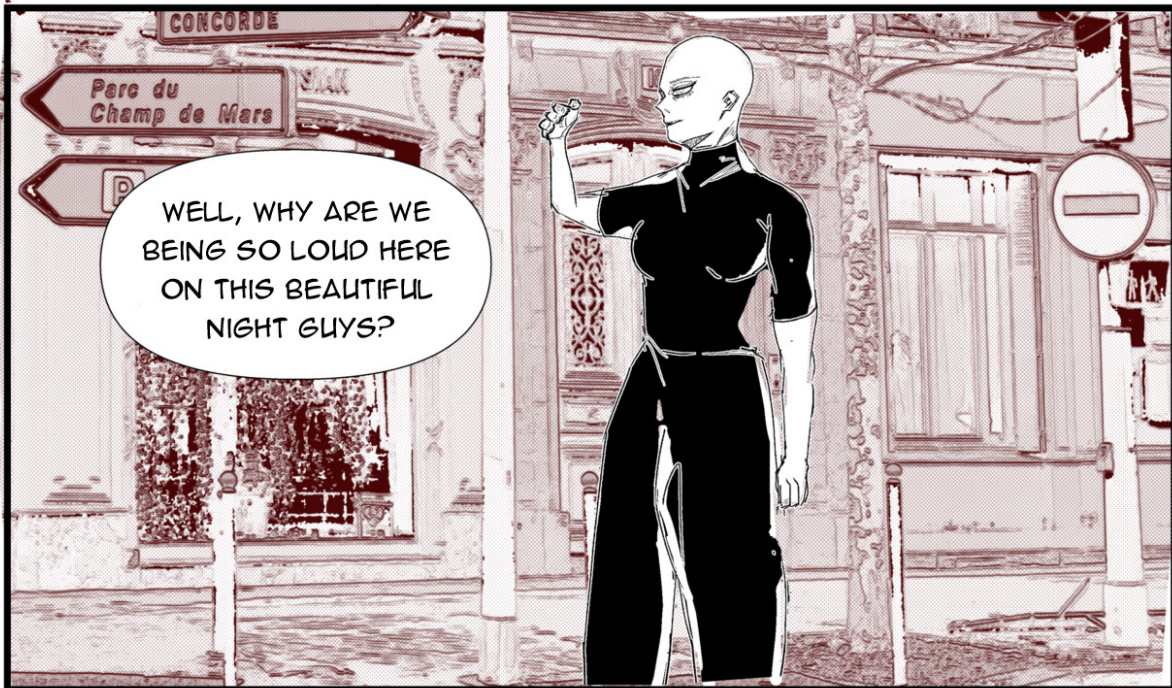
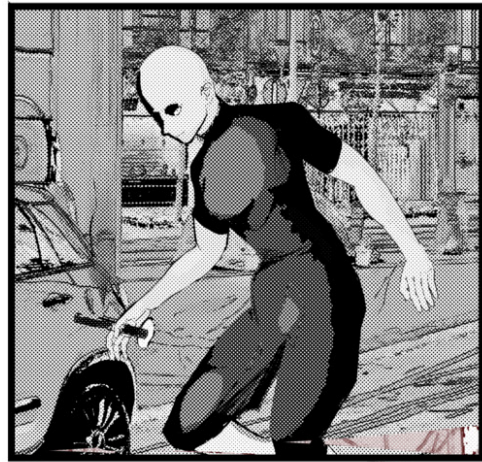
Ms. Worldwide

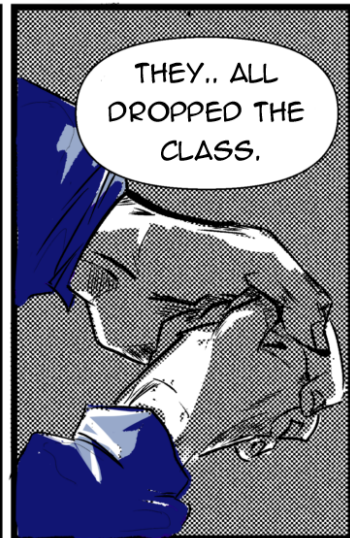
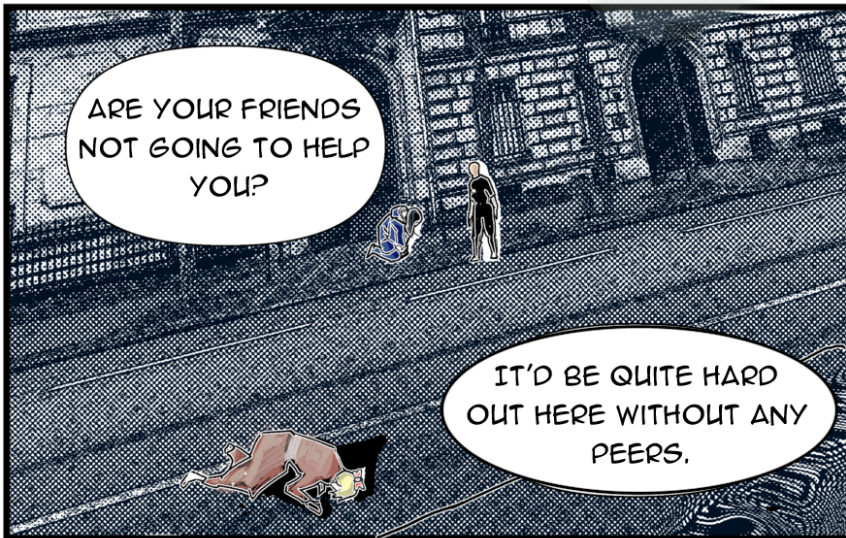
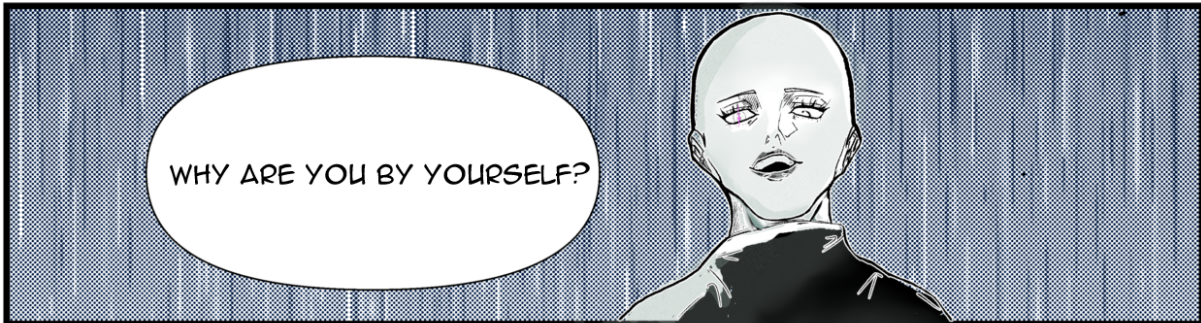
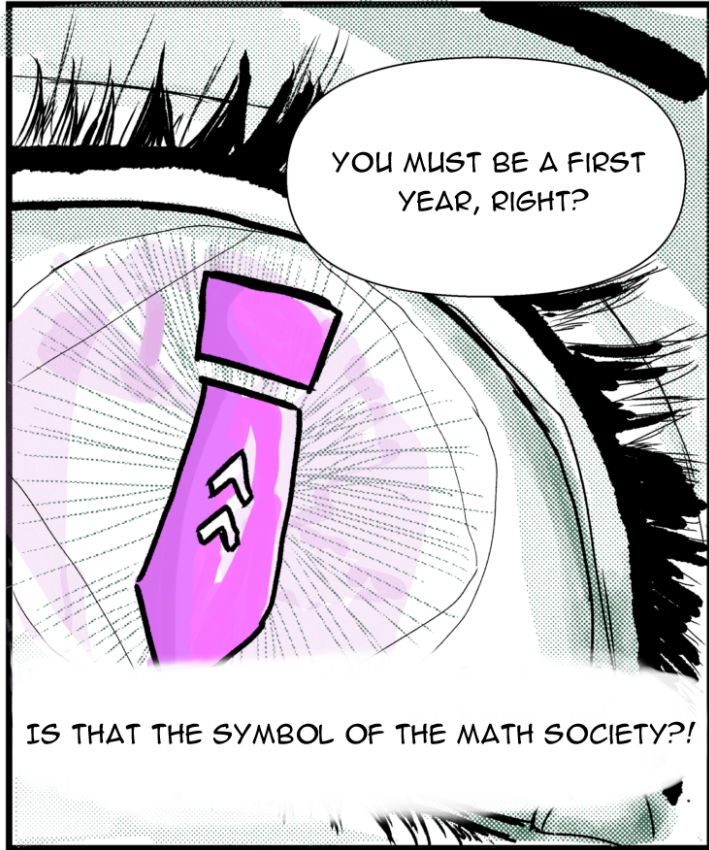
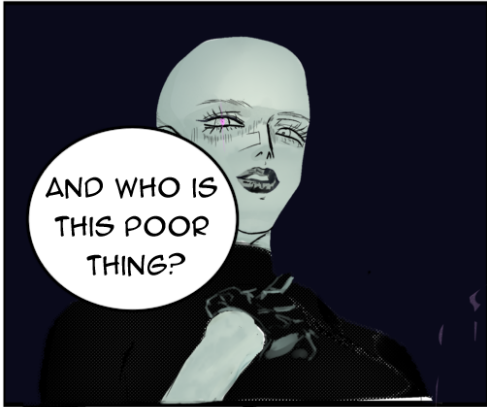


MATH 136: DETERMINANT OF MATRIX

STORY & ART BY ELIZABETH







THE DETERMINANT IS NOT THAT HARD TO CALCULATE.

Let F be a field and V an n -dimensional vector space over F . The determinant is a function $\det : \text{End}(V) \rightarrow F$ characterized by the following properties:

1. **Multilinearity.** When a linear operator T is written as a matrix with respect to a basis, the determinant is multilinear in the rows (and columns).
2. **Alternating property.** If two columns (or rows) are swapped, the determinant changes sign.
3. **Normalization.** The determinant of the identity matrix is 1.

UNFORTUNATE, BUT DON'T WORRY.

IN FACT, THINK ABOUT A UNIT CUBE FIRST.

EDGES OF A PARALLELEPIPED WOULD BE DETERMINED BY THE RESULT OF THE MACHINE, WHICH ARE THE COLUMNS OF THE MATRIX.

AND THINK OF A MATRIX A , AS A LINEAR MAP THAT ACTS ON THIS CUBE, THEN THE CUBE TURNS INTO A PARALLELEPIPED.

IMAGINE IT CAN BE A MACHINE THAT CAN "DEFORM" AN EDGE INTO A NEW SEGMENT.

THAT IS, THE VOLUME OF THIS PARALLELEPIPED WOULD BE THE SAME AFTER BEING "STRAIGHTENED" BY SHEARING IT, AND THIS VOLUME WOULD BE THE DETERMINANT OF THE MATRIX.

MAKING EACH EDGE PERPENDICULAR IS CALLED SHEARING.

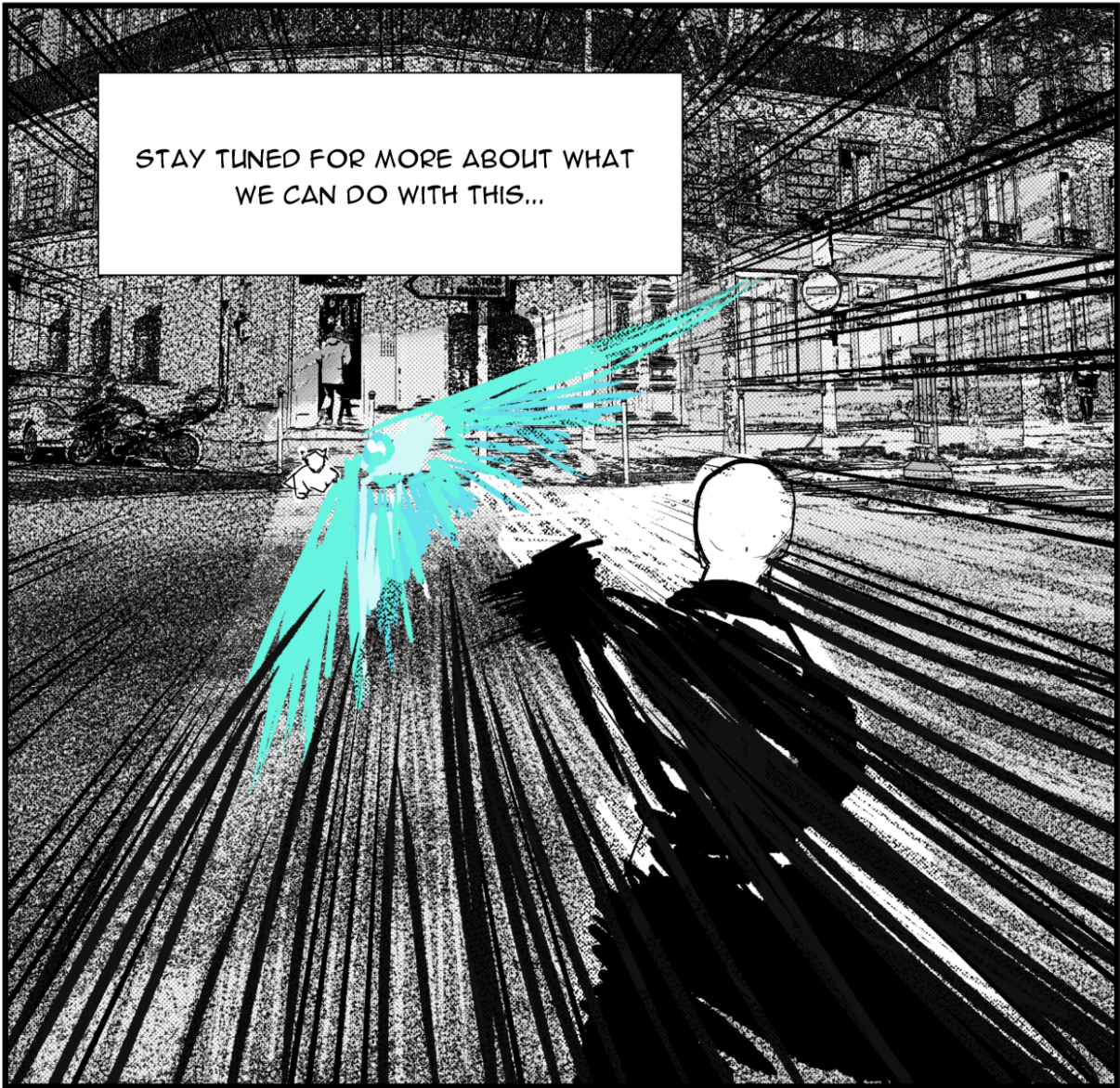
THEN CALCULATE THE VOLUME OF THE FINAL OBJECT.

PART OF THE OPERATION IN GAUSSIAN ELIMINATION.

$$A = \begin{bmatrix} a_1 & a_2 & a_3 \\ b_1 & b_2 & b_3 \\ c_1 & c_2 & c_3 \end{bmatrix} = \begin{bmatrix} a_1 & a_2 & a_3 \\ b_1 & b_2 & b_3 \\ c_1 & c_2 & c_3 \end{bmatrix} \rightarrow \begin{bmatrix} a_1 & a_2 & a_3 \\ b_1 & b_2 & b_3 \\ c_1 & c_2 & c_3 \end{bmatrix}$$

$a_1(b_2c_3 - b_3c_2) - a_2(b_1c_3 - b_3c_1) + a_3(b_1c_2 - b_2c_1)$

SO FINDING THE MAGNITUDE OF DETERMINANT IS THE PROCESS OF FINDING THE VOLUME OF THE PARALLELEPIPED, AND THE SIGN OF THE DETERMINANT WOULD GIVE THE ORIENTATION OF THE PARALLELEPIPED!



profQUOTES 161.4

AMATH 242: LEILI RAFIEE SEVYERI

“ If Portugal wins the World Cup you all get one bonus mark.

WLU CHANCELLOR NADIR PATEL

“ Thank you parents for all your support and your tuition fees.

CO 471: LEVENT TUNCEL

“ These bounds are tight, tight, and perhaps tight. If someone here proves the Unique Games Conjecture, then next year I will change this slide to tight, tight, and tight. If someone disproves it, then I will just say tight and tight.

CO 749: SOPHIE SPIRKL

“ Whenever you stand in front of a board, your ability to think thoughts decreases by a factor of at least two.

“ If you think about it, two is not the only number that exists.

“ Three and e are basically the same number, so we just have to compare exponents.

CS 240: ERIC SCHOST

“ We are not going to do LSD today.

CS246: ADRIAN REETZ

“ It's okay to steal from a dying person.

“ There's a bird inside of my duck.

“ How does friendship work?

“ Let's pray to the C++ gods for this code to run without error. *[Code runs with so many errors]*

“ If you try to make my bone independent from me I might object.

CS 349: ADRIAN REETZ

“ Do you guys still get an emotional reaction to Comic Sans?

“ Text is a string of characters. Welcome to CS 135.

ECON 102: STUDENT

“ *[During midterm]* So, the matching amount here, is that like matches on WaterlooWorks?

ECON 201: ANDREW GIBSON

“ Monopolist + Price Discrimination + Communist Revolution = Peak Efficiency!

PMATH 347: BLAKE MADILL

“ *[Smiles while waiting]* Why am I smiling? Well, there was a person who was being really mean to me and my family earlier, and this morning I saw them with their car broken down. I just thought of that!

“ It's horrible! Nowadays I don't get to take my kids to chickenpox parties and get everyone all sick and itchy. That was part of my childhood nostalgia.

FLUID MECHANICS I HATE YOU

HAD I MORE TIME THIS WOULD'VE BEEN A BETTER ARTICLE

had my prof decided to have mercy
had there been reading week
this would've been a better article



walk with me for a moment
imagine that you were in engineering
imagine you had an open book exam
no, this is not cause for joy. this means the devil has taken
over your professor
i don't even know what's going on in class
and i attend every single one
had this not been the case
this would've been a better article

my friends tell me that i'll do great
how do i tell them that i don't mean this out of self-deprecia-
tion
but rather out of objectiveness
when i say that i'm going to fail this fucking exam.
had i more time
had the devil not taken over
this would've been a better article

planet b612

let it be known that i have not once declared myself a poet and that
this is poetry that is even worse than rupi kaur. #uwlegacy
post-exam update: yeah the exam was awful. hope he curves it!

NOW, WHAT IS THAT?

ON THE HISTORY OF THE RICK-A-BAMBOO

A rick-a-bamboo. Now, what is that?

Ask someone who grew up around summer camps in North America, and they might just know. Per camp songs sung across the continent,

*A rick-a-bamboo
Now, what is that?
It's a something made
By the Princess Pat
It's red and gold
And purple too
That's why it's called
A rick-a-bamboo*

Sound familiar? It's sung as call-and-repeat; a leader calls out each line, and dozens of kids echo them. If you don't know the song, no worries—you probably know others. Childhood songs stick with you. You sing them so many times that the lyrics permanently take up the space in your head that might have been helpful for your next exam. Unfortunately, “The Princess Pat” contains no answers for you. In fact, it doesn't even contain a complete answer to its question—what is a rick-a-bamboo?

mathNEWS unfortunately cannot ask that the Princess Pat be more specific. After all, she's just a children's story.

The Department of National Defence has reinstated two leaders of a respected Edmonton battalion days after announcing they had been removed pending an investigation. A Defence Department spokesperson says Lt.-Col. Jason Hudson and Chief Warrant Officer Kim Doerr are again commanding officers of the 3rd Battalion, Princess Patricia's Canadian Light Infantry.

THE CANADIAN PRESS, JUNE 26, 2026.

hey wait what the fuck

On the seventeenth of March, eighteen-eighty-six, the British Prince Arthur and Princess Louise Margaret of Prussia gave birth to a baby girl, Princess Patricia of Connaught.

Twenty-eight years later, Canada waged a war to end all wars.

Twenty-eight years and one day later, Canada realized it didn't really have an army. Experts in military tactics commonly refer to this as a “big problem” and, in extreme cases, “really bad.”

Seeing this slight oversight, Canada rushed to form new battalions. When Prince Arthur, newly-appointed Governor General of Canada, approved the creation of Canada's third regiment, its lieutenant-colonel asked the Prince Arthur permission to borrow from his taste in names.

He proceeded to name the regiment after the man's daughter.

The rick-a-bamboo. Now, what is that?

There's seemingly little consensus on anything about it. Searching online, I was able to find spellings including:

- rickabamboo
- rigabamboo
- ricky bamboo
- ric-a-dam-doo

Most sources appear to agree that it's bamboo. Maybe it's from Egypt; though Egypt does not grow bamboo, looking up the Princess Pat on YouTube brings up thumbnails of a princess styled after Cleopatra.

The first verse goes as follows:

*The Princess Pat
Light infantry
They sailed across
The seven seas
They sailed across
The Channel Two
And they took with them!
A rick-a-bamboo²*

Traditionally, each line has an associated action. “The Princess Pat” involves striking a Z-pose from Egyptian hieroglyphics; “a rick-a-bamboo” involves tracing a wavy figure in front of you.

Why Egyptian? Why waves? Perhaps the rick-a-bamboo is the modern-day Caduceus staff; a straight pole of bamboo, with red, gold, and purple too, in ribbons weaving around its sides?

In the second verse, the rick-a-bamboo takes on life as a warding totem:

*Now Captain Jack
And his mighty fine crew
He sailed across
The channel too
But his ship sank
And so will you
If you don't take
A rick-a-bamboo!³*

This is a valuable warning, save for one small yet undeniable open question.

What the hell is a rick-a-bamboo?

Thirteen days after Canada began recruitment for its third regiment, three thousand recruits assembled for their first formal parade through Ottawa. The Colonel-in-Chief of the regiment presented them with a battle standard she had hand-woven herself, a flag which they would carry into every action of the Great War.

In January 1915, they arrived at the trenches of Europe. They fought in Ypres, the Somme, Vimy Ridge, and Passchendaele.⁴ Throughout the war, they lost over one thousand two hundred men. Each loss was suffered under their battle standard, which remains on display in Calgary today, original colours faded.

While its etymology is mostly lost, its name is not.



This is the Princess Patricias' Ric-a-dam-doo, hand-crafted by the Princess Patricia herself.

According to CBC Edmonton, the Patricias have a song they sing while on march:

*Our Rik-a-dam-doo [sic],
pray what is that?
'Twas made at home
by Princess Pat
'Tis Red and Gold
and Royal blue
That's what we call
our Rik-a-dam-doo⁵*

There's great disagreement among the many summers camps' variants of "The Princess Pat," but on one thing they all agree:

The rick-a-bamboo is not blue.



If you look online, you can find a guide⁶ on how to make your own rick-a-bamboo.



LIVING / 7 SEPTEMBER, 2020 / NANNY ANITA

Make A Rick-A-Bamboo

A rick-a-bamboo. Now, what is that? Materially, it's the result of generations of warping of the marching song of the Princess Patricias Light Infantry, so far removed from its original that the military context of the Ric-a-dam-doo has been almost entirely forgotten.

But then, if the rick-a-bamboo has become divorced from its original context, is it the same at all? Does it have an ancestry? Do purple-wrapped sticks bear the burdens of the Passchendaele past?

At what point of change is history forgotten?

Who is the Princess Pat?



Stormclouds roil the English Channel. From the Cliffs of Dover to the beaches of Normandy, once-fine infantry scream as lightning tears the decks below their feet asunder. Waves swallow men in the dozens, as the great Mother teaches men a lesson on preparation.

Only one escapes her fury. Amid the landscape of shattered masts and soaked lungs, a narrow patch of daylight breaks. Its golden rays land upon a flagship; sailing alone, its boards are painted black with tar, its ornamentation is solid gold. Well-muscled, lightweight men in canvas shirts climb its rigging, hands free to run fingers through the salted air.

A woman stands atop its bowsprit. Clad in a captain's black leather coat and tricorne hat, braids of black hair frame her olive face as she stares challenge into the lightning beyond. One hand grasps the rigging. The other holds to a long staff of yellow bamboo, where three weaves of cloth encircle its seaward end.

They're red, gold, and purple too.

circled ranch

1. "Senior leaders of Edmonton-based infantry battalion reinstated after investigation," The Canadian Press, June 26, 2026.
2. Source: Becky's Guiding Resource Center, https://dragon.sleep-deprived.ca/songbook/songs4/S4_17.htm
3. Source: A lot of summers in the woods.
4. They did not disband after the war. When Canada declared war again on Germany in 1939, they sailed from Halifax to England, then served in Italy and the Netherlands. When the Allies liberated Amsterdam, the Princess Patricias were the first regiment to enter the city. They fought again in Korea, in Afghanistan, and in UN and NATO peacekeeping forces across the next seven decades. They're not deployed anywhere at the moment, but they still maintain a presence in both Manitoba and Alberta.
5. "A Battalion Apart," CBC Edmonton, <https://www.cbc.ca/edmonton/interactive/princess-pats/>
6. One person's guide on how to make a rick-a-bamboo: <https://www.mybaba.com/make-rick-bamboo/>

GRAND STRATEGY GAMES AND THEIR LIMITS OF REPRESENTING HISTORY

ALSO PLAY VICTORIA 3

History, while something that can feel like it matters little beyond the classroom, is one of the most important ways to understand the world we live in. By extension, the narrative of history you consume will cause you to understand our present in a different way. There are various ways to understand and learn about history. Of course there is historical research and books, documentaries, the internet, and even games. While each and every one has their own flaws in their objectivity, I will be discussing the limits that historical video games, specifically grand strategy games (GSG) have in representing it.

For this discussion, the GSG *Victoria 3* (2022) will be used, mainly because I have played this game so much that if someone saw my playtime, I'd have to fake my death. *Victoria 3* is a GSG that takes place from 1836–1936 where you play as the “Spirit of the Nation” and build an economy into the industrial age while bringing your country forward by modernising your laws. You as the player have a lot of agency in shaping your country, whether through conquest, what type of economy you wish to build, or the type of laws you enact.

While the game is without a doubt quite enjoyable, it is inaccurate to say that the game is without its flaws. While there are many flaws that can be discussed (Diplomatic Plays), here I want to discuss historical accuracy. In the game, history happens in one of two ways, either A—Mechanically, where the game mechanics allow for history to play out naturally, or B—through flavour, where nation specific content allows for history to play out in a way very similar to reality. B is usually done using the Journal Entry system, where a country starts with or can trigger entries, and by completing them, trigger specific outcomes. For example, in Brazil, there is flavour content about preserving the monarchy, and preventing the establishment of the Conservative Elitist Republic. In order to preserve the monarchy and prevent the rise of the Elitist Republic, you have to keep the progress bar above five by the time the current Monarch dies to win this mini-game of sorts. This works well overall but there is a way that mechanics and flavour conflict via journal events. If you are at say six points by the mid-game, you have universal voting, and the political strength of the Elite is less than 1%, you would think that you would win no matter what, but when the monarch loses health, you lose one point, and when he dies you lose another. This leaves you at four when he dies and causes the Elitist Republic to be proclaimed, which has no strength and makes no sense gameplay wise, but it follows the flavour requirements to a tee. This represents one of the areas where history and gameplay often clash, and it may be easy to think *just make the game model it with mechanics*, but this can lead to cases where things don't follow history ever since mechanics can't model every nation's individual political situation without individual flavour. This shows the conflict in grand strategy games between mechanics and gameplay vs flavour and history.

MAGNANIMOUS MONARCH

Progress: 50.0% (5.00/10.0)

The status of the Progress Bar will be determined by various **positive** or **negative** conditions. The Progress Bar reaching 0 will lead to the end of the liberal Emperor's reign, and the proclamation of a conservative Republic.

Emperor **Pedro de Bragança**, the second ruler of the Empire of **Brazil**, has been thrust into his role at an early age following the abdication of his father. Pedro II aspires to maintaining democratic rule and protecting the civil liberties afforded by the constitution, as well as finally ending the institution of slavery which mars Brazil - despite the strength of the conservative forces arrayed against his liberal cause.

Will complete if:

- Brazil has enacted Monarchy
- The Progress Bar is above 50%
- Emperor Pedro II is dead

If completed:

- Emperor **Pedro de Bragança's** successor, and the **Intelligentsia**, will begin their reign in a strongly advantageous position
- **Interest Groups** will be more likely to choose progressive **Leaders** in the future
- Triggers the Event **Enduring Empire**

Will fail if:

- At least one of these:
 - All of these:
 - The Progress Bar has reached 0%
 - Landowners** are not **Marginalized**
 - Armed Forces** are not **Marginalized**
 - All of these:
 - The Progress Bar is below or equal to 50%
 - Emperor Pedro II is dead

BRAZIL'S MAGNANIMOUS MONARCH JOURNAL ENTRY

Another area where the games suffer at representing history properly is in the darker aspects, such as colonialism, slavery, and totalitarianism. These are some of the darkest parts of human history and show the depravity with which people commit atrocities against fellow people because of bullshit justifications. For this I will go into depth with colonialism as I feel it represents this point best. I will specifically be discussing the colonisation of Africa during the 19th century, as it ties in much more to game mechanics. Representation of colonialism in other places of the world ranges from being touched on mildly if at all (e.g Oceania) to having full flavour giving more detail to it (Indian subcontinent).



WORLD MAP AT START OF GAME, 1836

The map at the start of the game is meant to represent Africa in 1836, where European colonialism hadn't yet stretched its ugly hand over the continent, but the signs of it were present in places such as South Africa, modern day Senegal, and southern Ghana, among others. Colonialism is conducted in two ways in the game. The first is through the colonialism mechanic, which targets decentralized states (meant to represent areas with a lack of central government). All this entails is choosing to start colonising a state, and there is a chance they try and fight back, which is fairly easy to defeat because of the differences in technology. The other way is through puppeting and conquering states from centralized African states. The way it is done is very simplistic and does

not represent the actual process of colonialism or resistance to it. An example of this is the Battle of Adwa¹ in 1895, a battle between Italy and Ethiopia, where Ethiopia was able to repel Italian advances and prevent Ethiopia from being carved up during the European colonization of Africa. In *Victoria 3*, this isn't well represented, with many of the logistical challenges the Italians faced glossed over, as well as the many strategic decisions made by Ethiopia which allowed them to retain their independence for yet another day. While recent updates have closed the gap, to this day it is still unbalanced when it comes to colonial wars, which oversimplifies this period of history and the struggle that people from Africa experienced.

While it may seem I hate this game based off this, I actually deeply enjoy it. As much as it has faults, it has been steadily improving over the last 4 years. It still has this fault, and represents a larger issue with grand strategy games and their ability to represent history. It does not mean they're bad or evil, but you must use it as a jumping off point to understanding history, not the main and final source. Now since you've read this, why don't you try playing *Victoria 3*? It is currently on sale and it's really fun, PLEASE PLAY I BEG.

MrHistoryFactCheck

Getz, Trevor. "African Resistance to Colonialism." OER Project, <https://www.oerproject.com/OER-Materials/OER-Media/HTML-Articles/Origins/Unit7/African-Resistance-to-Colonialism>. Accessed 29 June 2026.

DEATH TO YOU, YOUR CRITIQUE, YOUR HERITAGE MINUTE AND YOUR SHITTY MOVIE TOO

A MEASURED RESPONSE TO TROLLEYPROBLEM22

On May 22, 2026, I allowed something bad to happen without comment. Thinking, naively, that one travesty in a publication full of gold couldn't possibly do too much wrong.

I have now seen the error of my ways. For nearly eight weeks, *trolleyProblem22* has been writing and releasing middling articles unchecked. This, on its own, would be no great burden upon me; anyone can write in the lovely sanctum known as **mathNEWS** after all, no matter what they... shit out. However, on the eve of June 19th, a slight of the unforgivable type was made against yours truly. I speak, of course, of *A Scathing Critique of "Have We Ruined Robot Rights Forever?"*. The unfunny, bad faith, HOGWASH of a critique against my witty commentary on AI fatigue.

Perhaps if *TemperProblem22* had managed to generate even the slightest iota of charge with the under-filled neuron-maraca they claim functions as a brain, they MIGHT have offered a good critique, and I would have had nothing to say. INSTEAD they open with a mockery of one of Canada's greatest tragedies, a mere TWO WEEKS after espousing the values of Canadian history and (poorly) writing a Canadian

heritage minute? Even once they cease to trample on the graves of hardworking Canadians, they can't seem to unearth themselves from their sexy android-filled anus long enough to notice that I already mentioned that being alienated from pro-AI plotlines has NOTHING to do with disagreeing with underdog messages or taking the stories in "bad faith" (as if they have a leg to stand on). The message here, for those so bored they would start **mathNEWS** beef, is that AI isn't as fun now that it's become a reality, not as you might have misunderstood that I have issues with allegories. In the future, I urge you to only inflict your critiques on niche movies no one cares about and leave those of us in the civilized world alone.

TL;DR: Waterloo has a writing and communication centre, open for free to all students. If you happen to have God's most overdone moral quandary as your name... it might do you some good.

Lyssa V33

P.S. Don't tell me to get a job, you write **mathNEWS** article critiques.

REFLECTIONS ON 'A CHRONICLE OF THE LAST PAGANS' (1990) BY PIERRE CHUVIN

RELIGION, LANGUAGE, & CULTURAL ROOTS

I am a pagan, or at least nominally I am a 'Chinese pagan'. Given my rather peculiar upbringing, I have had a bookish inclination for studying the antiquities of the East and West, namely the earliest ages of Mediterranean Antiquity (Sumer, Babylon, Assyria, Persia, Anatolia, Canaan, Egypt, Greece, and Rome) and Chinese Antiquity (the Xia, Shang, and Zhou Dynasties). But much like some Canadian-born Chinese, I have a questionable grasp of my ancestral tongue, and an even more questionable grasp of literacy of the marvelous creation of Cang-jie. Thankfully, I have had much leisurely time to teach myself a small trickle of (Classical) Chinese vocabulary. Yet, as to accessing ancient knowledge, I rely primarily on reading an eclectic assortment of translations of the primary sources and the rich and insightful secondary literature on ancient philosophy, history, and culture.

A Chronicle of the Last Pagans (1990) by Pierre Chuvin is a short historical monogram surveying the major transitional period in the Roman Empire, or more properly the Mediterranean World, as the traditional pagan cultures, political institutions, and religions of the various nations therein gradually declined and reformed. This book goes roughly century-by-century from the fourth century to the sixth, chronicling specific cultural, religious, and political events and how they constituted the myriad changes within the empire. This was the transitional period into the Christian (and Islamic) Middle Ages, where popular adherence to many traditional religious festivals, practices, and symbols and the various forms of pagan philosophy declined. These customs slowly became incorporated into Christianity and Islam, before finally the old cultures and religions became but a fuzzy memory for most common people, and an intellectual curiosity for literate elites. But what is a 'pagan', and how can I, a man of the twenty-first century, suggest that I am a pagan?

In Latin, *pāgānus* is an adjective meaning 'rural, rustic, of the country-side.' Putting aside the age-old prejudice of city-dwellers against country folk, the Latin word slowly and gradually took on the connotation (and finally plain denotation) of 'pagan': 'non-Christian, heathen, idol-worshiper, savage, barbarian'. Putting *back* the prejudice of city-dwellers against country folk, the change in meaning occurred in the transitional period of late Mediterranean Antiquity as Christianity became the common religion of the majority of peoples as well as the state religion. In the beginning, the Christianisation of the Roman Empire was not a sudden nor violent imposition upon the pagan peoples. Rather, it was a slow process of sincere conversions followed by adherence reaching some critical mass in the eastern empire, especially in the Levant, Egypt, and Greece. However, as Chuvin recounts, the decline of paganism was a complicated and messy mixture: one of selfish political gain in the name of religion, of frequent earnest desire to convert one's family, friends, and fellow countrymen, of mutual tolerance between Christians and pagans, and of the appropriation of the

ancestral cultures into a new Christian cultural and philosophical context. His book gives a greater depth of detail than any summary of mine could offer. Rather, I want to recount and reflect on a striking episode from Chuvin's chronicle of the Western pagans. We begin with a quotation of an Egyptian book called *The Perfect Discourse*, where the god Thoth-Hermes prophesies that:

"A time will come when it seems that the Egyptians, in the piety of their hearts, have honoured their gods in vain with a devoted cult [religion]... The gods, on leaving the earth, will return to heaven; they will abandon Egypt... That holy earth, land of sanctuaries and temples, will be completely covered with coffins and corpses. Oh Egypt, Egypt, nothing will remain of your cults but fables, and later, your children will not even believe in them!... For the divinity will return to the sky; the people abandoned, will all die, and then with neither gods nor men, Egypt will be nothing but a desert. It is to you, I speak, holy river [the Nile River], it is to you I announce the things to come: torrents of blood will swell your waters to their banks... and there will be more dead than living; as for those who survive, it is only by their language that they will be recognized as Egyptian: in their manners they will seem to be men of another race" (Chuvin 1990, 68)

The above passage is recorded by St. Augustine, a great Berber Christian theologian and author in his treatise *The City of God*. I have inserted two clarifications in square brackets. Here, Thoth-Hermes warns the reader, presumably a pagan Egyptian, that a day will come when the religion (and really, the culture) of the Egyptian people will cease to be practiced and eventually forgotten to the sands of time. Once their religion and ancestral culture have been forgotten, then Egyptian people may speak Egyptian, but they would seem to be people of another culture.

This quote, as Chuvin suggests, can be read in the wider history of the Roman Empire. On the 24th of February 391, in Milan, the Roman government banned people from entering temples and religious sanctuaries and from looking at religious statues in said places. Then, on the 16th of June 391, a similar edict was issued to the prefect and the military governor of the province of Egypt for the city of Alexandria. One major temple in Alexandria was the Serapeum, which was dedicated to the city's patron deity Serapis. Under the edict, the local bishop Theophilus obtained an abandoned temple in hopes of converting it into a church. But he "mockingly displayed the sacred pagan objects he found inside" (Chuvin 1990, 66). His act led to riots, the Serapeum was turned into a fortress, police were deployed in the city, and eventually the Serapeum was demolished. The riots led to a gradual exodus of pagan priests and scholars, such as a priest of Zeus (Helladius) and priest of Thoth-Hermes (Ammonius), who emigrated to Constantinople.

Reflecting on this episode of tense cultural polarization and religious factionalism and the somber prophecy by Thoth-Hermes, I am led to conclude the following on the interplay between culture, language, and religion: Foremost, that a sense of grounding in life often requires a deep sense of the history of one or more cultures.

Throughout *Chronicle of the Last Pagans*, I was captivated by the literary evidence being presented of the bemusement, confusion, shock, and outrage of the literate scholarly pagans as they witnessed the gradual erosion of their culture and way of life. These same human impulses and passions drove people to persecution and violence against family, friends, and fellow countrymen. The frequent argument by the pagan intellectuals (and politicians) is that the material well-being of their nation stands upon the collective adherence, practice, and continuation of ancient rituals, sacrifices, public festivals, public games, prayers, and veneration of ancestors. After all, the Gods, in their ever-elusive ways and divine Providence, guided and ordained the course of history, human affairs and natural events. Likewise, for the ancients, this orthopraxy, the myriad rituals and sacrifices to the Gods meant praying for health, food for all, social cohesion, and political stability. Doing these costly rituals with one's family, friends, and fellow countrymen brought everyone together in common cause and common hope.

The initial bemusement (and later fear and outrage) to the slow demographic replacement was well founded since, under their worldview which was common to all ancient (and possibly still many contemporary) societies, the adherence to the tried and true ways of one's community had demonstrated the fruits of purpose, meaning, stability, and harmony. In short, I think both the pagan intellectuals and common men and women had an intuitive grasp on their place in the cosmos, which was tied to their rich socio-cultural life under their local ethnic religions and regional cultures, and such pluralism and general practical tolerance appears to be the norm in most antique empires such as in India and China.

In my own life, I worry since as I continue to read and study ancient philosophy and history, I have developed a rather nascent sense of my place in the greater cosmos and a sense of what will bring true fulfillment and happiness in life. Yet, I have struggled to find kindred spirits who have a joyful curiosity towards the wider world or even a veneration of what has come before in one's cultural or religious heritage, though I have met a few marvelous friends whom I have been able to confide in. I am no spoilsport and I recognize that everyone is busy with dozens of obligations. However, I am often taken aback by the seeming lack of curiosity or awareness of tradition in my many years in university. I fear that lack of curiosity, awareness, and veneration of one's ancestral culture really is both a correlation and cause of cultural prejudices and intolerance for different ways of life, different ways of thinking, and different attitudes towards the countless attitudes of life.

Parochialism is the attitude or tendency to confine one's interests and understanding to a very narrow range of things.

Thus, paradoxically parochialism is born and enabled by ignorance of one's own culture or by a shallow grasp of both one's own culture and the cultures of other people. The more I study, read, and reflect on my ancestral Chinese tradition, which I see as the subtle overarching unity of Confucianism and Daoism (with the later adoption of Buddhism into the family), and on the Western tradition, which I see as the synthesis of Roman-Greek pagan philosophy, traces of various Mediterranean pagan religions, and Christianity, the more I feel that the world around me has forgotten the wisdom and knowledge of old and these have become but vague whispers and mere fables that no-one will soon remember nor care for. There might come a time in the future, when it is only by their language that anyone will be recognized as Chinese or Canadian. Yet in their manners, they will seem to be men of another land or culture. It is in this oh-so-complicated way of alienation and isolation from the many that I feel a perverse kindred with those men and women of Mediterranean Antiquity, those last pagans.

hinlef

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THE AXIOMS AND INVARIANTS OF INDIVIDUALISM

In continuation of *Individualism, Autarky and the New Age*.

As we have established earlier, the times have moved on. The political theories that we cite from, for example, that of the American Constitution, or that of Marx or Mill, while useful, largely hearken back to the Industrial Era, or earlier.

Context must be understood. For example, the American Constitution was born out of a time when tyranny was not anything like "the British Empire shall clamp down on all dissenting newspapers" but rather that of "the British Empire is going to take all of your property, without your consent." This is obviously grossly exaggerated, but the crux is (predominantly landowner) property nonetheless. A very Renaissance era demand. The early theories of liberalism (Locke) are rooted in the protection of those privileges.

As societies moved into the industrial era, the state capacity expanded, and the new political theory of that era simplified into a much more utilitarian approach, being that of a more "equal" society. In an industrial nation, where you are (largely) either working the mills or owning the mills, the useful distinction has always been who owns what, and the prevailing theories of socialism seek to address the disparities here. Of course, as it travels to different countries, it also broadens to (attempt to) include all inequalities, such as that of land ownership, or colonial discrimination.

So in the "new age," where yet more social and economic dimensions are introduced, the models of political thought must adapt to address them. It should be no surprise to the readers of this publication that the largest difference in the economy of today and that of the 1970s is the emergence of the quaternary sector, or information sector: the field where value produced is relative to knowledge and capability asymmetry.

So where does that leave us? Before we get lost in the weeds of history, let us trace our steps back to the beginning. Individualism is not a "new idea." In fact, the philosophy backing of the word "liberty" alone traces back to Marcus Aurelius; "social contract" traces back to Thomas Hobbes and John Locke; "rights" back to the divine; and "free will" back to Aristotle. And we are not even mentioning yet the non-Western origins of similar ideas. These are just the limitations of the author's knowledge.

And there, we find interesting axioms that persist still through time, and perhaps we find salvation.

As with any good formal system, we start with those. But bear with me, as I am a terrible conduit of philosophy and just a terrible mathematician in the sense that I will refuse to formally define my variables and terms.

You have been warned.

We assume the existence of the self. Specifically, the existence of "I."

We assume the self has agency.

(Thus, we consider the self an individual.)

Not yet society, not yet other people, not yet anything material. We start from the idealist view of the world that is just "I" and anything we observe cannot be proven real because observation is unreliable. (This is left as an exercise for the reader, but please refer to Plato's Allegory of the Cave as an entry-level reading on why empiricism cannot be used as a basis for the existence of the world around us). We also assume that "I" am capable of responsibility. This is a position on the free will debate, which I will avoid like the plague.

Even this is a lot of assumptions for the metaphysicians reading this.

But we have to start from somewhere.

Now, in the times since, we have come to different variations of ideas and philosophies that concern the individual in a political sense. And we can observe the commonalities, or the “invariant” that does not change amongst those theories.

Again, without much rigour or detailed formulations (I would have to make this a Ph.D. thesis to include those), we find that *agency* underpins the invariant. Specifically,

We assert that there are other existences of the same class of “self” that has the same class of “agency.”

We assert that “agency” grants us inalienable dignity.

(That is, society exists and every member of it is an individual and is given inalienable rights. This is the common theme in individualist political philosophy frameworks. I hesitate to formalize “society” because some may argue that “society” is nonsense. But if we assert that other selves do not exist, then we have no politics whatsoever to speak of, and this whole exercise is futile.)

For example, we are subjects of the Kingdom of Ends in the Kantian tradition, where we are asked to treat others (other selves) as more than mere objects. The American Constitution similarly entitles us to rights, concretely to life, liberty, and the pursuit of happiness.

What exactly those dignities entail or who should be considered “with agency,” however, are the real battlegrounds.

The recent interpretations of individualism posit that *all humans should be granted these rights*, i.e., that they are human rights.

And what these rights entail has always been a subject of debate as well. For example, should food, or water, or shelter, be included in this “*dignity*”? Should compute, or knowledge, or housing? These are the questions we have yet to resolve.

But nonetheless, our theoretical basis starts here. Perhaps in the future, our definition for who belongs in the class of individuals will expand, or what dignity should be like will change over time. But that is a question for philosophers of the future.

So here, we leave the exact formulations (of my own) for the next article. For we have now established a common ground we can agree on.

RobbotC

TEN FEET TWENTY

I played *DELTARUNE Chapter 5* the second it released.

It made me get up out of my seat and pace around my room so many times.

Especially that one scene. Oh, maybe those two colors are just a coincid—oh. Ohhhhhh. Just straight up saying it. Out loud. It’s real. I didn’t think it would actually get confirmed. There were tons of unsubtle signs in previous chapters and even in this chapter alone and I was silently hoping it to be true for a long time but. Wow. This is the timeline where this is really happening. And during Pride Month, even. We won. It’s no longer just a headcanon. Oh my god.

Also, so many new vocal stims! (“I’m falling!,” “Mysterious winds,” “Here I come, San Francisco!,” “Sustingus!,” “They’re eating my flesh!,” “What a predictable creature,” “Hey guys, I think I found a glue!”)

And dang, that is one of the most morbid quicktime sequences ever.

I can’t believe *DELTARUNE Chapter 5* is real.

Ja-rona!

I AM WRITING THIS ARTICLE WHILE STANDING IN LINE FOR PIZZA

Currently the line is not moving at all cause it just got started recently and Editors are still setting stuff up. As such, I theoretically have a decent chance to crank out a stream of consciousness article that will earn me pizza. More people are arriving as I type this on my phone. I am now in the middle of the line rather than the end—if I get desperate for writing time, I can drop out of the line and go to the back. Honestly I’ve already written enough to guarantee me some pizza. I have a pretty good reputation (not that anyone’s keeping track) in that I’ve presented half-finished/barely started articles before while promising to submit an article by the deadline, and I have delivered every time. But now that I’ve started this project, I’m kind of compelled to see it through authentically. I will finish this before I get to the Editors checking articles at doors.

I was about to write that the line was moving quite slowly, but suddenly it got going. I need to step back ASAP. I’m now looping around to the back of the line. My friend just asked me why I went back in line and I said you’ll see soon, but—

the government’s only spy

THERE'S PUPPYBOYS IN MY GOONETTE GAME

AKA LOVE AND DEEPSPACE WELCOMES A SIXTH LOVE INTEREST AND I AM HERE TO ANNOY EVERYONE ABOUT IT

For those of you not in the know, *Love and Deepspace*, affectionately and ironically nicknamed *LADS*, is an otome, dating sim game released by *Infold Games*. It is a Chinese internet & interactive entertainment company founded in August 2022. Aside from *LADS*, *Infold* is the brains and the (debatable) geniuses behind games such as *Infinity Nikki* and *Mr. Love: Queen's Choice*.

As of the time of writing this, *LADS* is currently home to five love interests (named in order of game appearance as love interests):

- Xavier, a(n implied) hypersomniac and fellow *Deepspace* hunter, arguably the closest in age to the main character (MC). Has the baby-boyest eyes. I used the wording “arguably closest in age” because he’s technically also an alien who is centuries old.
- Zayne, prodigy and childhood friend of the MC. Has ice powers just like Elsa. Extremely accomplished cardiac surgeon at 27. Main criticisms against him are that he’s too aloof and the driest out of all the love interests. Real ones know how freaked out he is.
- Rafayel, a renowned and celebrated artist. Also a merman. From an ancient species, in fact. He’s the face of the game — literally. In Kpop terms, he would be the visual and center that fans constantly infantilize. Cool mermaid tail. Has really cool fire powers despite being part fish.
- Sylus (my man), a clear imitation of those ‘shadow daddies’ that have infected booktok. Legit the leader of the in-game mafia. Anytime anyone asks me why I let this game rot my brain, my first course of action is to show them his voice.
- Caleb, MC’s closest childhood friend, *Deepspace Aviation Academy* heartthrob turned aviation-pilot wunderkind turned half-cyborg colonel. Has gravity powers, fittingly enough. A very popular fan-theory is that he’s a panty sniffer.

The sixth love interest, Valko, to be welcomed July 9th, fits right in with our current cast of muscled and towering LIs. In his announcement trailer he sports an all-black ensemble, complete with dirtied cargo pants and all-too-tight tank top. True to the countdown’s title of ‘Supermoon Countdown,’ his trailer follows him as he sprints wolfishly across a moonlit forest, revealing his tail and ears. Nearing the end of the trailer, he leaps onto the rocky terrain as he rips off his muzzle (yes, a muzzle), shakes his short red hair, and bares his fangs and yellow eyes.

Keep in mind, I saw this trailer first thing in the morning, groggily brushing my hair. I recall watching the trailer in pure shock, taking a second to stare into the distance and burst out laughing. You see, *LADS* has *always* been cringey, from the aforementioned mafia boss with a y/n + CEO dynamic with

the MC, to the event card released around last year around Valentine’s Day, featuring the LIs strapped up in chains and leather. If you ask me, I welcome this game’s initiative of opening up the player’s minds to the early 2000s werewolf-craze. Plenty of *very* loyal fans of the game, however, beg to differ.

Many rushed to the comments of the trailer and other social media promos, calling Valko chopped, likening him to be a weaker version of the other LIs (in all fairness, he *does* resemble both Sylus and Caleb, face-wise at least), many voiced their embarrassment in evoking a very Jacob Black-like imagery of his obvious werewolfism. Chinese fans, in particular, took the time out of their day to take photos of themselves raising a certain finger towards the Infold building.

While all that may seem like juvenile complaints, there *is* rightful, genuine frustration behind this new LI. For instance, fans have been begging for Infold to optimize the game. *LADS* has very rich visuals, and very heavy aspects to it. There’s a battle system and a homemaking aspect akin to what one may experience in *The Sims*, forcing plenty of players to make more room in their devices, or even deleting the game. More notably, *LADS* itself may have a cult-like following and this is especially true for the individual, current love interests. The first three love interests, Xavier, Zayne, and Rafayel were introduced in the first chapter, *LADS 1.0*. Sylus and Caleb, on the other hand, were released as love interests much later in the game, a couple months to a year after the game’s release. As of the time of writing, the first three are explored plenty in the main story, even long after their first chapter releases. Many fans felt like Sylus and Caleb’s subsequent stories would be coming up next, but lo and behold, a new LI drops when no one expects it.

An important note is that *LADS* uses the gacha system, with players spending gems, often attained by in-app purchases, for even a chance of obtaining a 5-star (the rarest) event card. It’s essentially gambling for a chance to experience alternate universes and plot lines, aside from the main story. Fans who are particularly loyal to 1 or more of the LIs are enraged by Infold’s clear attempt to gain more money by welcoming a new LI while mostly not responding to the very understandable criticisms of their works.

As I said earlier, I am very interested in this Valko character. While no one will ever come close to replacing my preference for Sylus, the teenage woman in me can’t help but be intrigued at the prospect of fictionally romancing a werewolf tech-chairman.

That being said, I really do hope that Infold at least genuinely tries to address all the critiques their predominantly female players have. They’re one of the few companies that take

into account the previously-ignored demographic of female gooners.

sylusmybabydaddy

AN EDITOR PRACTICING AUSTRALIAN

G'day mate!

DRINKS FOR THE SUMMER

We are at the heart of summer :) The number one thing to drink are cold drinks! Here are the top ten drinks as a university student in Waterloo.

10. Energy Drinks (refrigerate it for at least 30 minutes and enjoy). **Please drink safe amounts and drink more of the number one choice.**

9. Pop drinks that are refrigerated or with ice added (but don't drink too much as too much fizz is bad for your drink).

8. Mock/cocktails of all sorts WITH ice (mojitos, shirley gingers, pop mixed with juice...)

7. Fruit Juices.

6. Smoothies (preferably the ones with a little bit of protein).

5. Electrolytes (including Gatorade).

4. Boba/Tim Horton's drinks (can't decide between them).

3. Iced Coffee (same message as the energy drinks, remember to drink more of the #1 Drink). They are goated for studying.

2. Iced Matcha (my absolute goat study drink). They have caffeine, but they have chemicals so that you don't crash easily. They also give you other health benefits. But this does not beat the #1 drink which is ...

1. ICED WATER; great for hydration, we can't survive without this.

-SKY---MATH-GURL-----

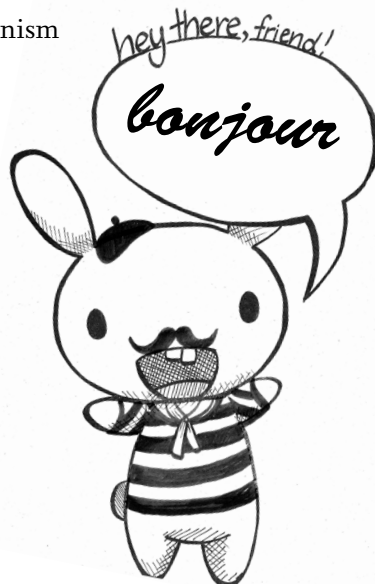
IDK WHAT I'M GONNA WRITE, I JUST WANT FREE PIZZA

No literally. This is even more shitposty than my usual fare. I'm kinda mentally dead right now and need to eat so :(((

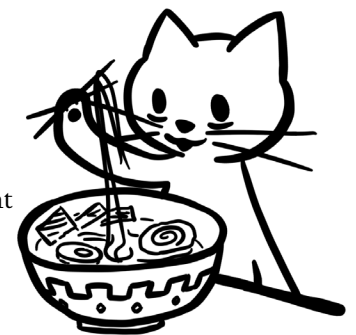
burgerqueen

WHAT IS YOUR FAVOURITE WORD?

- defenestration
- sesquipedalian
- dubious
- antidisestablishmentarianism
- duck x2
- regulus
- indubitably
- meow x2
- nonce
- puh
- indeed
- genuinely
- fh
- borborygmi
- oriole
- foxfire
- bisbigliando
- smorgasbord
- sophistry
- rock
- sus x2
- abysmal



- ethereal
- linux
- nullstellensatz
- responsibility
- unheimlich
- asymmetric
- anticonstitutionnellement
- toient
- instrument
- coke
- sternocleidomastoid



mathgeek

Send more profQUOTES.

THE ENTIRE mathNEWS READERSHIP

GEOGRAPHY OF CHESS OPENINGS

Well, **mathNEWS** said they wanted more filler content. So here are a bunch of chess openings named after places, and some useless facts about them.

ITALIAN GAME

Probably the first opening beginners study. One of the oldest openings out there, initially studied and played by Italian players. It is good (and bad) because you can probably just play any sensible move in the opening as both sides, and get a playable position. Unless you are playing 5. b4.

SPANISH GAME

(E.g. Ruy Lopez). A common mistake here is thinking that having doubled pawns is a huge disadvantage. It is a long-term weakness, but the bishop pair (or the initiative) is something the opponent can immediately use, while doubled pawns aren't much of a problem until the endgame. So don't play Bxc6 unless you know what you're doing! This line contains my favourite opening, the Marshall attack, and my least favourite...

BERLIN DEFENCE

Why do you play for draws? Life is hard and depressing enough as is, at least have some audacity on the chess board! If you are playing in a tournament, then I can understand why draws are sometimes helpful, but I will laugh in the face of someone playing the Berlin or some full-defensive opening thinking they are Drawmnik or Iron Tigran and instead getting steamrolled.

VIENNA GAME

Another capital of a German-speaking country. It is a quiet game compared to the above, with slower positional play likely. That being said, don't try being a 'positional player' if you're a beginner; the first thing is that you will stand no chance against a stronger opponent, and the second is that you need to first learn how to conduct an attack and convert a material advantage. If you can't win reliably with a clean piece, exchange, or two pawns, don't think you can with a superior minor piece or control of the long diagonal. On the other hand, the Austrian attack is a completely different style, going all out for the attack—although no one plays the Pirc.

BUDAPEST GAMBIT

Let's keep moving along the Danube. This is one of those rare cases where Black offers a gambit to get active play. While there is a schematic way for White to get a small but clean edge, this opening is very annoying to play against, especially in fast time controls. There is also a Hungarian defence—but it is a drawing weapon which is worse than the Berlin, so I will not explain it.

LENINGRAD VARIATION

All the places above are in once-Fascist countries, so let's move to the other extreme. The Leningrad Variation is famous in that Botvinnik played it as a 'fun' game in a lost championship match against Tal. That game is nicknamed "The Fall of Leningrad", which did not actually happen despite a 900-day siege.

SCANDINAVIAN DEFENCE

Perhaps we should talk about more positive things. The Scandinavian defence is a good weapon for taking down a stronger opponent. It essentially forces an open game where strategic prowess is of less use. That is also a tip for playing stronger opponents in general: open up the position and attack! Not surprisingly, the same holds in pretty much every game out there, football included.

DUTCH DEFENCE

I only said that after watching Netherlands vs. Japan. Anyway, the Dutch is one of those openings where you put yourself at the edge of a cliff—but if your opponent goes too far, you can turn around and push them off the cliff instead. There is also an interesting story that Canada temporarily declared a room in an Ottawa hospital as non-Canadian territory in 1943 so that a Dutch princess could be born there.

SICILIAN DEFENCE

If you mirror the board, the Dutch becomes the Sicilian. This is a very old, sharp and imbalanced opening, still played by Grandmasters and beginners alike. In fact, I would recommend studying the lines (not just memorising; also know how to play the middle-game positions you get) if you intend on playing 1. e4. Alternatively, just play 2. c3 against it if you don't want to learn all the theory. It was even the default response by Deep Blue to avoid complications.

LONDON SYSTEM

Speaking of openings not requiring studying, the London system is one of them. You can pretty much ignore your opponent and play: d4, Nf3, Bf4, e3, Bd3, Nbd2, c3. Meanwhile, Black virtually has no active plan against White, until White gets active and Black can counterattack. It is no surprise that this opening is often criticised as boring and repetitive as White can choose to never get active, but hey, at least we are not immediately trading queens.

FRENCH DEFENCE

On the other side of La Manche, the French defence is one of those rare openings putting Black in the driver seat. Your third move essentially decides the style of the game: a sharp 3... Bb4, a quiet 3... Nf6, or the drawing weapon 3... dxe4. That being said, this opening requires a lot of theory.

KING'S INDIAN DEFENCE

Let's end this article with something not in Europe. The King's Indian Defence is a hyper-modern game—disobeying the classical rule to control the centre, instead giving the centre to White so that we can attack it later. Much like all hyper-modern games, don't play if you're trying to learn the game; follow the advice from Vienna. But still a fun opening.

Gardener

ANIME REVIEWS PART 17

THERE HAVE BEEN DELAYS BUT YES THIS IS STILL A THING

JOSHIRAKU — 6/10

It's very telling that the very first thing that happens in this anime is a conversation between its protagonists about how it shouldn't exist, i.e., that it should never have been adapted out of the manga medium to begin with.

"This is a dialogue-heavy piece,"

says Tetora, one of the titular *joshi*,

"[and] most of it takes place in a dressing room."

And she's right: the show is about mundane conversations that the characters, who are performers of *rakugo* (a type of traditional Japanese comedy based on elaborate storytelling), have when they aren't onstage.

But beyond that, this is a deeply weird anime. Or at least I think it is. It belongs to the well-established genre that some call "Cute Girls Doing Cute Things," or CGDCT for short (not to be confused with the GCDCT of MATH 135). And sure, I like cute girls as much as the next guy, but "doing cute things" doesn't often make for a compelling plot.

And yet, this show did still have a chance to redeem itself, were it to be funny. It is a comedy, after all. But even that aspect largely fell through for me, because *Joshiraku's* humor—while genuinely funny on occasion, is often steeped in references to Japanese culture, traditions, people, geography, and especially the Japanese language. It's honestly impressive that they managed to put together a coherent subtitled of the show given how many of its puns are essentially untranslatable.

That's not a bad thing per se, but it does tend to make many of the jokes rather inaccessible to *gaijin* such as myself. Like, here's an analogy: if this show were set in Canada instead of Japan, the kind of jokes they would make would be about the declining quality of Tim Hortons, the scheduling of TTC expansions, the PEI potato industry, Newfoundlander accents, and the intricacies of stringing together pieces of Quebecois

profanity. Stuff that would be uproariously funny to me, but would likely have non-Canadians scratching their heads.

As I've said before, I can only ever review my personal experience of a show, and perhaps this time around, that experience was hampered somewhat by my Westernness.

VIVY: FLUORITE EYE'S SONG — 8/10

I've got a pretty good track record as of late when it comes to recommendations from my friends, and this one was no exception: If you recall from last term, there was a team called DEATH in the Key Clues Puzzle Hunt, of which I was a member. That name was an acronym, and it was the one denoted by *E* who suggested I watch this when we were chatting about anime one day.

Vivy is set in a world that is at once futuristic and yet, perhaps, all too similar to the world we now live in—one replete with AI. But this show is from 2021, a few years before LLMs really took off in the real world, so its language surrounding AI is just a little different than ours is today. What it calls "AIs" are lifelike humanoid Claude wrappers, basically, and live amongst humans in various occupations. It's a fair bit like *Detroit: Become Human*, if you've heard of that.

And as is often the case in these kinds of stories, the humans find themselves in the midst of a bloody war with no hope of victory as the AIs seek to exterminate humanity and supplant them as the dominant species. You would be right to call it a tired trope by now, but this show takes the idea in a novel direction—the very first of these AIs, a purpose-built songstress named Diva (but called *Vivy* by her friends), is visited by a much more advanced model from the future named Matsumoto, who was sent to team up with *Vivy* to prevent the uprising. Over a period of a full century, they set out to tweak the course of history just enough to stop the AI-human animosity from fomenting in the first place.

The most commonly said thing about this anime, as far as I can tell, is that it's underrated. It was written by Tappei Nagatsuki of *Re:Zero* fame (an accolade that means nothing to me, frankly, but I've been hearing people like *Lyssa V33* from the last issue mention its 4th season all the time) and produced by the same Wit Studios responsible for *Attack on Titan*, so if you like those you can reasonably expect something similar out of *Vivy*. And if it's as scarcely-watched as they say, then I think I can agree—the art design and animation is superb, the worldbuilding is cohesive, there's great music both diegetic and not, and I think the sci-fi and action elements would appeal even to people who don't normally watch anime.

There's nothing earth-shatteringly spectacular about the writing in my opinion, but *Vivy* explores a lot of interesting questions about the potential of AIs to do things we consider fundamentally human and I found it compelling from start to finish—a great story with great presentation. Worth a watch for sure.

N SAYINGS THAT DON'T EXIST

Here are some sayings that don't exist, for when you want to make a comment that isn't too cheesy and cliché. These will make your friends either amazed by the greatness of the choice of saying, or utterly dumbfounded because the meaning takes too long to get.

"TAKING THE RICE AT AN ALL YOU CAN EAT"

You're not making the most of an opportunity, and wasting it on less useful things, like eating rice instead of hounding the meats, not making your money's worth at an AYCE.

"SITTING ON A PITCH HE DOESN'T THROW"

You're trying to prepare for a situation that's not gonna happen.

"ASKING FOR CHICKEN STRIPS AND FRIES AT EVERY RESTAURANT"

You don't branch out and try something new even if there's no downside if it doesn't work out. For example if you have a friend that keeps going back to the same playlist for road trips to the point where it gets annoying to listen to you can go like "Bro, you're asking for chicken strips and fries, play something else."

"LOST TRACK OF THE NUMBER OF OUTS"

The job's not finished, but you've already started acting like it is.

"THE TRAIN ISN'T GONNA WAIT FOR YOU TO CATCH YOUR BREATH"

Shit moves quick and you need to be prepared to just follow along.

"YOU CAN BOIL YOUR WATER EASIER ON A MOUNTAIN, BUT IT'S NOT GONNA MAKE GOOD TEA"

You can take the easier road to get to a solution, but it isn't gonna give the best results.

"WISHING FOR SNOW IN JUNE"

Trying to hope for something to happen that just won't no matter how much you want it to.

"PUTTING POSTERS IN THE MIDDLE OF A FOREST"

Your communication is going towards places where no one will see/acknowledge it.



"SHIPPING A YELLOW BANANA"

Taking care of a situation too late, such that the result is going to be bad, sort of like how a yellow banana would go bad when it arrives as opposed to a green banana.

"ORDERING MORE FOOD BEFORE THE MAINS HAVE ARRIVED"

You're getting way too far ahead of yourself and you're gonna get swamped with pressure and obligations that you can't handle like how you're probably gonna over-order if you don't give yourself time to gauge where how you might feel after eating (i.e. not having the main courses in front of you to see if you really need more food.)

"TURNING A HIGHLIGHT INTO A FOOTNOTE"

Downplaying an achievement and making it into some irrelevant point.

"TURNING A FOOTNOTE INTO A HIGHLIGHT"

Trying to exaggerate an irrelevant point beyond its importance.

"NOT EVERY RIVER FLOWS ABOVE GROUND"

You don't need to constantly be seen by others to be valid.

"CHANGING THE FONTS ON AN EMPTY PAGE"

Doing something that is unimportant and insignificant in a situation where more important things need to be done.

"NO AMOUNT OF POKER EXPERIENCE WILL GIVE YOU A BETTER HAND"

Sometimes life is just the way it is. You have to just deal with it.

"YOU DON'T NEED TO BE THE SPITTING IMAGE OF YOUR ID TO USE IT"

You don't have to follow in the footsteps of who you were to be successful as the person you are now.

"GRINDING YOUR SPIKES ON CONCRETE"

Like track and field, basically misusing a tool/opportunity in a way that will affect its usefulness in times when you rely on it.

"PUNTING ON THE GOAL LINE"

Picking the worst option available.



“YOU DON’T NEED TO PITCH ALL NINE INNINGS TO WIN A GAME”

You don’t need to be in control all the time for something to be successful.

“DRINKING SOUP WITH CHOPSTICKS”

Inconveniently approaching an issue/situation.

“NOT ALL COUPONS HAVE TO BE USED”

Not every opportunity needs to be taken. Sometimes, it’s better to just sit back and watch.

“SHAVING YOUR HEAD WITH A LAWNMOWER”

Being way too extreme in a situation.

“ROLLER COASTERS ARE THE WORST RIDE ON EARTH IF YOU ONLY CARE ABOUT THE START AND END”

Just because the result wasn’t good, it doesn’t mean the experience wasn’t either.

fingersinsockets

OH GOD THEY’RE MULTIPLYING IN YOUR AREA



They’ve made children again.

... Does this give them even more rights as squatters?

TotallyNotAGoose

SCRABBLE 5-VOWEL SEVENS SORTED BY REAL LIFE SIZE

For circular things I took the diameter, for long things I used the length. For everything else I used my best engineering judgement :p

OOGONIA: immature diploid germ cell (10 μm)

AMOEBAE: microscopic single celled organism (500 μm)

ZOOECIA: chamber housing a zooid in a bryozoan (0.5 mm)

AECIDIA: cup-shaped reproductive structure in some fungi (1 mm)

OUGUIYA: monetary unit of Mauritania (2 cm)

AREOLAE: area of skin surrounding the nipple (3 cm)

EXUVIAE: outer skin shed by an arthropod (5 cm)

ROULEAU: roll of coins (8 cm)

AUREOLA: halo (16 cm)

COUTEAU: general term for a knife (20 cm)

AQUARIA: container displaying marine creatures (50 cm)

ALIENEE: one to whom property is transferred (1.71 m)

AUDITEE: one who is audited (1.71 m)

EVACUEE: one who is evacuated (1.71 m)

IPOMOEA: the morning glory plant (5 m)

EPINAOI: open vestibule in an ancient Greek temple (6 m)

TAENIAE: tapeworm (8 m)

EUGENIA: genus of plants in the myrtle family (12 m)

SEQUOIA: species of tree in the cypress family (90 m)

ACEQUIA: Spanish irrigation canal (1 km+)

AURORAE: light display in earth’s upper atmosphere (12 000 km)

N/A: ABOULIA, AENEUS, AEOLIAN, AEONIAN, AERADIO, AEROBIA, ANAEMIA, AQUEOUS, AUREATE, AUREOLE, EUCAINE, EULOGIA, EUPNOEA, MIAOUED, NOUVEAU, OIIOID, OUABAIN, URAEMIA.

foxshark

REJECTED mathNEWS ARTICLES

YOU COULD CALL ME SOMETHING OF A REBEL MYSELF

One of the things I love about **mathNEWS** is the lack of a barrier to be published. In many other works, you would expect a high bar to be published, which would push out those who don't feel they are a good enough writer. Luckily, **mathNEWS** is cool like that and lacks this barrier of entry, with each writer having a guaranteed article to be published for each issue. That is, as long as they follow the rules (including but not limited to a word count under 1000 words and no submissions past 10 a.m. the day after **prodNIGHT**). That being said, even with the generosity of the editors such as *sloshED*, articles have been rejected and lost to time, the only traces left of them being their titles on WordPress. But I don't want to let them be forgotten, so for all the articles that got lost to time, this is for you!

Name: *Flag*

By: *Me*

When: 2025/10/07

Rejected Issue: v159i3

Unlike every other article here, I can tell you why this was (rightfully) rejected. I submitted it at 2 p.m. the day it was due and added photos using a bad photo hosting site (aka Discord). Due to this the article got rejected and sadly got left in the **mathNEWS** backrooms. For those interested, I was ranking the flags of Bhutan and Nepal. Maybe if I get lazy and need a quick article I will try and redeem it.

The other two articles will be from years ago, partly so that any articles mentioned are not by current writers but from the great writers in the sky (aka graduated writers).

Name: *N Reasons mathNEWS Authors Dressed up as Cat Maids*

By: *Shahabee*

When: 2022/11/03

Rejected Issue: v150i4

This article seems to be a time honored tradition to bully the editors which has continued to this day during the production night. It seems that for this year the **mathNEWS** editors made the brave step to be cat maids that no editor today would make (though they should #GetTheEditorsDressedAsCatMaidsForNextProdNight). If I had to guess why this was rejected, it would be the fact it was marked a secondary article, and as such it can be rejected from an issue if there is not enough room to include it.

Name: *Dusk Eagle and Shay Blair's Excellent Adventure*

By: *DiminutiveRex*

When: 2016/03/29

Rejected Issue: v130i7

The first article to be rejected of modern **mathNEWS**. Based off my quick research, Duck Eagle and Shay Blair were both editors of **mathNEWS** during this time period. What this article is about I do not know. It could be some sorta duo traveling the world, or if they had the yaoi tradition of modern **mathNEWS**, it could be a love story too. Despite my uncertainty of what it was about or why it was rejected, I do know it is a piece of **mathNEWS** history. Whoever those involved are, they should be proud for being the first rejected article in modern **mathNEWS**. The reason this was rejected is lost to time, but not to our hearts.

MrRebelSky

LETTING THE MASK SLIP — ALBUM REVIEW

EDWARD SKELETRIX – BODY OF WORK

Initial rating: 4/5 stars

Listen number: 2

Favourite Tracks: "Slavery," "Art Is Sucking The Life Out Of Me Man," "정말 많이 정들었어요! Im So Attached"

The first [mask] you show to the world, the second you show to your family, and the last you never show to anyone.

Frequently described as "a man playing a character playing a rapper," the unattributed Japanese parable above has long represented Skeletrix's approach to his self-presentation and the social experiment of his stardom itself. Edward Skeletrix's 2026 release *Body of Work* may be the closest glimpse the audience will ever have of that last mask. To those unfamiliar, Skeletrix is an experimental rapper with a history of high-concept and avant-garde releases, seemingly present in

esoteric art scenes of the elite and the underground simultaneously. This omnipresence is second only to his apparent omniscience; for release after release, he has stayed ahead of the trajectory of the rap game and seems intent on dragging us into the future which he inhabits with him.

As far as audio itself goes, this document has a lot of refreshing sounds for the pleasure of the modern rap listener. The album is largely a ghost pop tape, with the occasional interjection of Skeletrix's hypnotic antiflow. The production elucidates an older and bygone world of cloud rap; one without any trace of attention whoring or ambition for success. Despite being at the greatest stage of his success, something of Skeletrix's youthful soul has been bound to this record, making the listener imagine the creator as just a kid with instruments and a computer making songs from a place of authenticity.

This much, however, is completely untrue of the vocals. Skeletrix sounds more morose than ever. His flow has continued to innovate what the experimental rap scene saw in figures like Earl Sweatshirt, once again bringing to mind the minimalist and modern scenes of visual art, a minimal and degenerative flow created seemingly ad hoc with next to no soul in the studio. In this sense it is truly a natural successor to his previous release, *Museum Music*, which itself bore themes of ivory tower high art contrasted to the imminence of the music industry.

It is this heartless flow that seems to be representing the truest parts of Skeletrix (in the opinion of the critic) on this record. Listening to his poetry and how he contrasts flexing status to an entirely dejected flow and the occasional tongue-in-cheek obviously anti-capitalist remark, I am genuinely concerned for this man. This album expresses a depth of suicidality even I am unfamiliar with. What do you do after the industry has encircled your soul, brand, and culture so efficiently? What else could he possibly do?

Skeletrix also continues a pattern of allowing the natural ambient noises of his bodily processes to interrupt his flow. Coughing fits, snorting and clearing his nose, fidgeting, sighing, and breathing can be found rather ubiquitously across the vocal tracks of this record. This deliberate inclusion allows us a look at an unmanicured Skeletrix, one who does not give a fuck that we are looking, not one little bit.

This brings to mind a theme of the ritualistic abuse of rockstars in the international music business. Incredibly young stars are reaped by the crawling scouts of the industry, wrapped into optimally marketable personas, and given more

wealth and more emotional crises than they can manage. This leads to the recurring loss (sacrifice?) of these stars to drug abuse (too many to count.) Skeletrix's performance reminds this listener of the last performances of Elvis, a sputtering rock star at the peak of his career, ignored for his suffering and celebrated for the innovation it brings.

So much is left unsaid on this album. We, the audience, are desperate for these red herring scraps of personality that Skeletrix feeds us, and his response is to restrict this vulnerability as much as he feasibly can. Nonsensical bars and verse-less songs ensure this effect. It is important to understand that all semblance of personality in this record is merely showmanship; sincerity is a grave sin in the Skeletrix language.

This presentation of almost-sincerity spattered amidst sardonic expression when paired with innovatively minimal production creates something which I find charming in a way that is truly human. Skeletrix has transformed his jadedness into one last enchanting cry for help, exposing his nude soul in the macro scale.

I'm a slave on a good day.

Final rating: 4/5 stars

Wanna swap ratings and recommendations and stuff on the world wide web with me?

<https://rateyourmusic.com/~adecayingkeleton>

a decaying skeleton

N SAYINGS THAT DO EXIST

"A PICTURE IS WORTH A THOUSAND WORDS"

When you go to an art auction, you notice that auctioneer talks quite a lot before selling a piece of art, trying to increase the sale price, saying maybe hundreds, maybe thousands of words. Auctioneers say that much because they think that it's worth it to use a thousand words to sell art. That's what they mean when they say "A picture is worth a thousand words."

"I THINK, THEREFORE I AM"

Have you ever thought about the words "therefore I am?" This is what they mean when they say "I think, therefore I am" because you think (of the words) therefore I am.

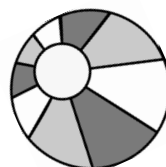
"BEAT AROUND THE BUSH"

So you're having a pillow fight with friends in an active minefield and you spot a landmine hidden in a bush. This is where the saying "beat around the bush" is meant to be used. This is to signal to your friends that there is a mine in the

bush, and for safety, to continue play (or beat) around the bush instead of on the bush, avoiding it.

"CURIOSITY KILLED THE CAT"

Everyone knows about the saying "Curiosity killed the cat," but not many know that there's a second half to the saying. While the saying is meant to tell you that you shouldn't pry too much into unnecessary information, the second half, "so don't be curious or more cats will die," is a threat that is meant to support the first half.



fingersinsockets

INCREMENTAL GAMES I PLAYED RECENTLY WITH A MINI REVIEW

GAME OF CHANCE (7/10)

Fun in the beginning, slog later on because you can't get any rare events.

TERRAFORMENTAL (8/10)

Its a good game with loop mechanics and good story, both of which I love, but holy shit the wait is a long-ass time.

REJECTED DRAFT (9/10)

I started playing this today, it's a really good game at least early on, idk about the late-game though.

POINTS PROGRESSION (5/10)

I have no clue what I am doing in this game tbh. Maybe its because I'm in the early-game but the gameplay is boring.

Fried Rice

CANADA 159

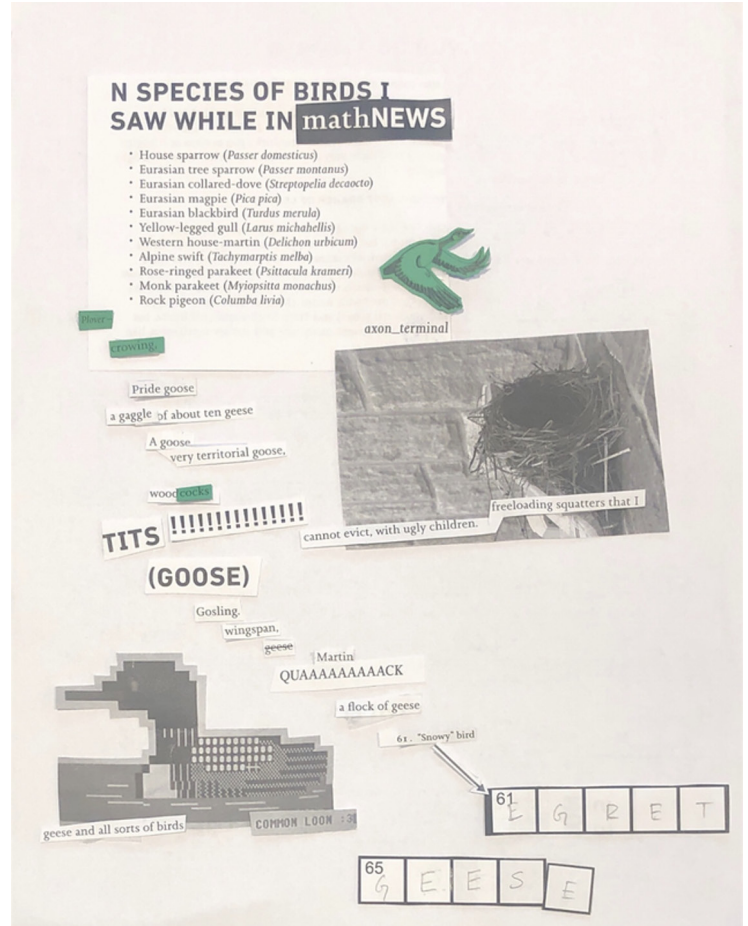
Happy belated Canada Day. As the country begins its 159th year of confederation, we enter into an increasingly unpredictable world. With separatism on the rise in Alberta and Québec, and a hostile neighbour to the south, things can feel rather daunting. Despite this, I do think there is a lot of good happening around us that merits celebration.

There are many great things about Canada, whether that be the beautiful landscape of the country, the institutions that make the country what it is (such as bilingualism), or the millions of people who call the country home. That includes you, reader, whether you're from PEI, Alberta, or have come from another country to study here. You are a part of what makes this country what it is.

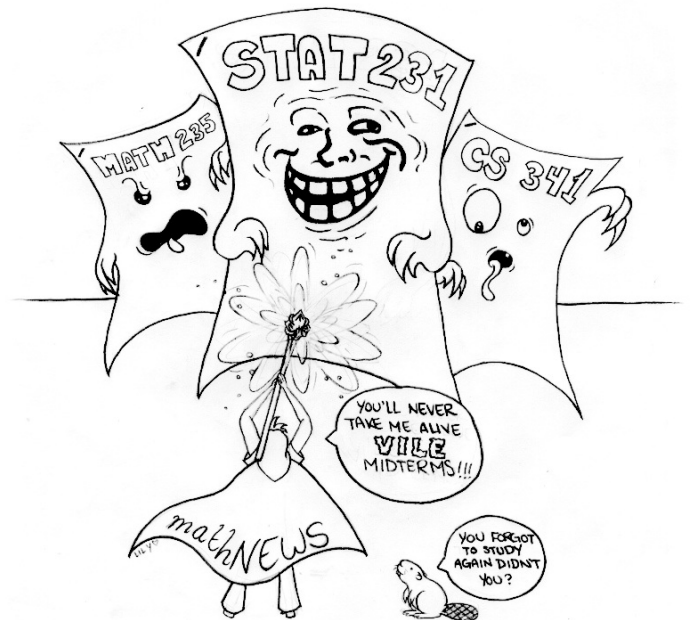
In no way am I saying the country is perfect, far from it. There is still a housing crisis, racism continues to be an issue, and the country does not have the best conditions for small businesses. Celebrating does not negate this, but reminds us what and who we are fighting for. As we enter this next Canada Day, remember how much progress has happened, and how much more needs to happen. I hope you and those you are close with had a great day.

MrOhCanada

mathNEWS COLLAGE



rutabaga413



ACRONYM ACROPOLIS: ELECTRIC BOOGALOO

gridCOMMENT 161.4

yo

welcome back to acronym acropolis *boss music*

i'm sorry about the no theme and difficult clues. not very "friday" of me. you may know that i normally try to reserve eldritch horrors for final issues, when there is no gridQUESTION. however, i have been suffering through my own eldritch horror (second round of sinusitis this month alone) and i could not come up with a theme for the life of me, which is slipping away from me as i speak. the life, that is. the life of me is slipping away from me. anyway

last time, i asked you all what your favourite complex number is and why, and you all said:

- *rutabaga413*: my favourite complex number is i ... because it seems really really important ☺
- *sunnysideup*: My fave complex number is i because it's the only number confident enough to be told it doesn't exist and still solve problems.

• *awmlet*: $2i$

i think *sunnysideup* has the best why i , so congratulations!! please pick up your prize at mc 3030. allow me to take this moment to remind everyone of the latin maxim "quod gratis asseritur, gratis negatur" for no reason at all

the gridQUESTION for this issue will be a direct copy of the one from acronym acropolis 1 (because i do not have the mental capacity to think of one otherwise): what is a notably very difficult skill/profession you have zero experience in that you think you could easily excel in? please submit your completed gridWORD, gridQUESTION answer, and a pseudonym to mc 3030 or mathnews@gmail.com by july 13 at 6 pm for a chance to win a prize

adios amigos,

spaghettinhalers

ACROSS

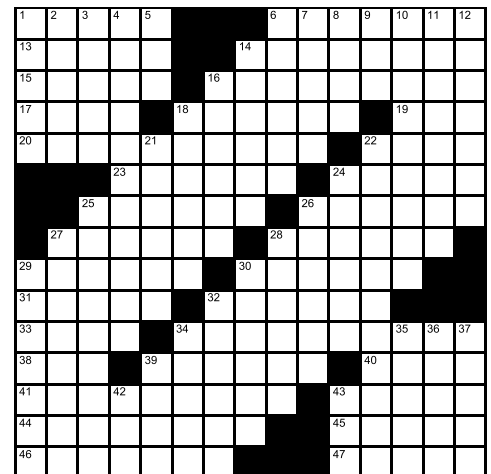
- Hawk's home
- Natural numbers?
- Bell's bellow
- ~0.14s
- Regretful repenting
- Abberationless
- Edible earthroot
- Suspect seizure
- Blackbird
- Succession scion
- Money maker
- Pressing
- Charity claimant
- Ho-hum
- Negligent
- Absent attendee
- Clean cloths
- Californian Cascades cap
- Lengthy leaping
- Autonomous automobile
- Attach again
- Optimistic
- Lawmaking leader
- Trick taker
- Quiet
- Fragrant flower
- Suddenly surging
- Approximately around

- Custom cut
- Ceremonial church centre
- Kept
- Color changers

DOWN

- Agricultural area
- Evasively escape
- Bandits' busts
- Harmlessly
- Bird-born breakfast
- Soften
- "Stop!"
- Left
- Hereditary helix
- Achieving aims
- Slender state
- Abnormal abdominal accumulation
- Rapidly rose
- Fiercely faithful
- Cardiac constriction
- Manuscript mistakes
- Briefly
- Request rejection
- Brewing bistro
- Most mature
- Clerical chief
- Behind

- Narrow nautical necks
- Fabled figure
- Depended
- Volume value
- Dense dessert
- Academy Award
- Parents
- Small speck
- R
- Cdn. cash



Email gridWORD solutions to mathnews@gmail.com.
And yes, we do award points for creativity.

lookAHEAD

SUN JUL 5

UW Game Jam Showcase
6 PM in M3 1006

MON JUL 6

abstractED's birthday

TUE JUL 7

WED JUL 8

Employer rankings
available
Body Painting Day

THU JUL 9

FRI JUL 10

Student rankings due
Match results available

SAT JUL 11

abstractED's birthday

SUN JUL 12

MON JUL 13

mathNEWS 161.5
prodNIGHT
Last day to start work
to earn a flexible co-op
credit for the Spring 2026
work term

TUE JUL 14

Shark Awareness Day

WED JUL 15

abstractED's birthday
Be a Dork Day

THU JUL 16

FRI JUL 17

mathNEWS 161.5 releases

SAT JUL 18

Women's Dive Day

STATS CLUB IS DOING STUFF Y'ALL!!

STATS IS LOVE STATS IS LIFE, LET'S GO TO STATS CLUB TONIGHT

hi everyone!! can we please make stats club great again and enjoy our fun upcoming events. what fun upcoming events, you ask?

well, we've got:

INTRO ML WORKSHOP

struggling with co-op? meet us at stc 0050 on july 7th (this tuesday!!!) from 7–8:30 p.m. and get that ml engineer internship with our beginner-friendly instruction and shawarma :0

STUDY SESSION

want some quiet study time, drinks + snacks and help with your statistics class? come to our drop-in study session mc 4041 on july 8th and enjoy the lofi vibes

STAT 230 REVIEW SESSION

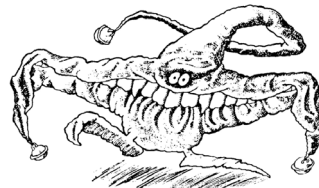
if you're confused about all these distributions, we're generating a moment at mc 1085 on july 13th from 7–8:30 p.m. to review all that + pizza yum yum

231 REVIEW SESSION

let's reject the hypothesis that you fail in mc 2034 on july 14th from 7–8:30 p.m. with some za !!!

okay pls come bye bye

uw stats club



LAST ISSUE'S gridSOLUTION

1	H	E	R	B		5	F	E	T	O	R		10	D	O	G				
13	A	Q	U	A		14	A	R	O	M	A		15	A	R	A	16	B		
17	L	U	N	C	H	18	B	R	E	A	K		19	L	I	R	A			
20	V	I	N	O	U	S				21	H	E	S		22		23	E	F	T
24	A	N	E	N	T					25	M	A	R	T	26	I	N	I		
27	H	E	R	S		28	L	E	E		30	S	O	O	T	E	D		31	
						32	R	E	A	D				33	I	T	A	L	Y	
34	O	F	F	B	E	A	T			38	A	L	C	A	L	D	E			
40	C	L	O	U	D					41	S	P	A	S						
42	A	I	R	S	A	C		43		44	A	R	T		45	O	R	T	S	
		49	P	S	Y	C	H	50	I	C				51	D	I	A	R	Y	
52	U	F	O			53	T	A	M				54	O	I	L	C	A	N	
55	G	L	O	B		56		57	S	A	U	N	T	E	R	I	N	G		
60	H	O	T	S		61	E	G	R	E	T			62	I	N	C	A		
		63	P	H	D			64	R	O	N	D	O		65	G	E	E	S	