



"WHAT IS THE PETTIEST, SMALLEST INJUSTICE YOU'VE SUFFERED THANKS TO THE CORONAVIRUS?"

Hey everyone, I'm god ⚡ peED, your brand-new, shiny editor for the Spring 2020 term. Finally, my writing can make the first page of **mathNEWS**.

For all of you reading this, the first thing I want to do is thank you for sticking with us through these... exceptional circumstances. I know this isn't how I thought my first stint as editor would go. But, through the power of Remote Desktop and Wordpress, we're keeping the ~~academic~~ journalistic mission alive. If you keep reading, we'll keep writing, no matter how much the government makes us not leave our houses.

But, enough talk about current events. For the rest of this **mastHEAD**, let's just forget about the coronavirus with a movie review.

CONTAGION (2011)

Contagion is the story of how a disease, spread from bats to pigs to one of those Chinese BBQ chefs to Gwyneth Paltrow, jumps worldwide and forces the world to shut down until a vaccine is found. I believe the director, Stephen Soderbergh, is either a time traveler or was in fact responsible for the current pandemic.

Matt Damon is immune, but his daughter is not, and so Damon must gruffly intimidate his daughter's boyfriend for months to avert a disaster. Eventually a vaccine is discovered, Bryan Cranston conducts the world's largest game of bingo to select who will get it, and the world is saved.

Netflix has been recommending this to me for months, and you know what? Netflix was right. In *Contagion*, 25 million people die in like a week, people just start burning things for no reason, and Matt Damon is forced to break into a friend's house for a gun and canned soup.

Makes you feel better about the world, to be honest.

Well, that's enough insensitive humor for one day. Enjoy the issue, and stay away from Stephen Soderbergh.

god ⚡ peED
Editor, **mathNEWS**

clarified
Editor, **mathNEWS**

DERIVING FOR DICK	I had to reinstall Grindr because I haven't seen my fwb since February.
ALYSSNYA	Not getting cesb
JEFF	Getting cesb and subsequently being audited by the CRA
CC	Asking a question and being ignored by the store person since I mumbled too much with a mask on
TENDSTOFORTYTWO	Not getting irl mathNEWS pizza
WATER	The indefinite postponement of the Stairway Constants epilogue...
CIX	Not getting irl mathNEWS pizza seconded.
BEYOND META	The chair I ordered to work from home doesn't fit comfortably because of my disproportionately long torso, which I only found out after assembling it all by myself despite the fact that the instructions required two people to build it.
SANDWICH EXPERT	Not getting IRL mathNEWS pizza thirded.
QUANTUM GOOSE	I was put on hold for an hour calling customer service, then had to wait two hours in line just to get an exchange.
WHATIFOS	Couldn't do field research for any of my article ideas.
FINCHEY	There was a time when there were literally no canned beans to be found anywhere. Who the fuck has the patience to wait for dry beans to soak and simmer? Not yours truly.
A COOL PEN NAME	Zoom movie nights but <i>Trolls: World Tour</i> is the only movie that exists
GOD ⚡ PEED	The coronavirus has postponed the rollout of the Popeye's chicken sandwich to Canada.
CLARIFIED	Not getting irl mathNEWS pizza fourthed.

ARTICLE OF THE ISSUE

This week's article of the issue goes to [Operation Memphis: Installing and Using Windows 98 in 2020](#), by tendstafortytwo. Your commitment to your cause is inspiring; your hard work has shown us the light and truth. We stand down. You win. The bragging rights you've earned by besting the editors are worth more than any sort of monetary prize. Isn't that great?

I wonder if I have any CRT monitors lying around...

CLARA XI, **mathNEWS** EDITOR FOR SPRING 2020
ALONG WITH JAIME ANDERSON, JOSH RAMPERSAD, AND KEVIN TRIEU

mathASKS 143.1

FEATURING mathNEWS EDITORS CLARIFIED AND GOD ⚡ PEED

SANDWICH EXPERT: FOR ALL EDITORS: WHAT IS THE ORIGIN OF YOUR EDITOR NAME?

clarifiED: “Clara” + fy = clarifiED

god ⚡ peED: <https://bit.ly/2TDiCZn>

SANDWICH EXPERT: FOR ALL EDITORS: WHAT IS YOUR FAVOURITE mathNEWS ARTICLE OF ALL TIME?

clarifiED: Finchey’s [Your Definitive Guide to Getting a Date this Valentine’s Season](#) from V139i2. Should be mandated reading. That article changed my life.

god ⚡ peED: Shoutout to jeff and supermagictesseract, authors of the recurring series [Davidson v. Jao](#), which has gone from a rap feud to a collaborative story exercise. **mathNEWS** needs more recurring segments, and these two are delivering.

BEYOND META: WHAT HOBBIES HAVE YOU PICKED SINCE THE PANDEMIC STARTED?

god ⚡ peED: A while back I started making bread, but I’ve stopped because my shitty oven mitts have worn through and I couldn’t stop imagining dropping a 450-degree dutch oven on my feet.

clarifiED: I didn’t pick up any new hobbies, but I started drawing more with the extra time I had. School starting up has put a damper back on that. Now that I think of it, being a **mathNEWS** editor is kind of like a hobby — it keeps me busy, it’s pretty fun, and I don’t get paid to do it!

TENDSTOFORTYTWO: WHAT IS YOUR FAVORITE NON-MATH BRANCH OF STUDY? WHY?

clarifiED: I like drawing, so it’s probably natural that I like Fine Arts. Someday I want to take an art history course that covers modern art. I also have a vague interest in literature: while I’ve liked visual arts my whole life, I’ve only recently realized the beauty that words can have (that sounds really cheesy, but it’s true). I also really like learning about U.S. history during the Cold War era: history is full of interesting characters.

god ⚡ peED: To be honest, I’m not a huge fan of anything that might count as a field of study here at the university. I used to think I would say political science, but there’s a lot of essays and stuff involved and it’s not nearly as interesting as I thought. If any of you guys know about a screenwriting course, let me know.

SANDWICH EXPERT: FOR GOD ⚡ PEED: ARE YOU SINGLE AND IF SO, WHY?

god ⚡ peED: Yes, and good question.

JEFF: WHY mathNEWS?

god ⚡ peED: Because I got to this question first, I get to say why not **mathNEWS**?

clarifiED: The community, the camaraderie, the creativity, and the humour... Uh, I mean, why not **mathNEWS**?

god ⚡ peED: Ok, I’ve been shamed into a serious answer, I think. I’m not, by nature, the kind of person to get out there, but I do have a weakness for making people listen to my jokes. **mathNEWS** has allowed me to channel that productively into a way to meet people and get capital-I Involved in something on campus. Frankly, it’s been a hugely important part of my university experience.

QUANTUM GOOSE: HOW DO THE S20 EDITORS PLAN TO RUN mathNEWS INTO THE GROUND THIS TERM?

god ⚡ peED: In an entertaining and dramatic fashion. Expect fireworks, lasers, and synchronized swimmers.

clarifiED: What? Run into the ground? Excuse you. Where is the faith? Such blasphemy.

ALYSSNYA: IF UW CONSTRUCTION HAPPENS BUT NOBODY IS THERE TO SEE IT, HAS IT REALLY HAPPENED?

clarifiED: My calculations show that the probability of this happening is 69%.

god ⚡ peED: I mean I still haven’t seen it in person. Could be an elaborate Photoshop. Big construction is everywhere. They could be watching this question and answer section right now — I mean, yes, I love the idea of cost-plus contracting and public private partnerships!

BEYOND META: WHAT’S THE THING YOU MISS THE MOST RIGHT NOW?

god ⚡ peED: Just talking to people in person. Video calls are better than nothing, but people don’t normally talk in huge 15 person free-for-alls, even when they’re together in groups.

clarifiED: I miss being able to wander through campus and hang about the city with my friends. I don’t relish the fact that I spend most of my time every day sitting on my office chair in my cramped apartment bedroom.

ALYSSNYA: WHAT’S YOUR OPINION ON THE 2016 CLASSIC TETRIS WORLD CHAMPIONSHIP FINALS?

clarifiED: I have none.

god ⚡ peED: Jeff Moore was robbed. Jonas Neubauer is an illegitimate champion.

CC: HOW MANY BOOKS WOULD YOU RECOMMEND A PERSON READS IN A YEAR? TWO YEARS? FIVE?

clarifiED: A *Finnegan's Wake* a day keeps illiteracy away!

god ⚡ peED: As many as you want. Trying to match some reading high score doesn't make much sense to me. That being said, I've read like one quote unquote book in the last three months, and it was a stolen PDF about North Korean defectors.

SANDWICH EXPERT: FOR GOD ⚡ PEED: WHEN WILL THE NEW mathNEWS WEBSITE BE READY?

god ⚡ peED: When it's done, you'll know because I won't stop talking about it and putting it on my resume and showing it to literally anyone I meet in person.

TLLLOW PRINCESS: WHERE IS YOUR FAVOURITE WASHROOM ON, THE NOW CLOSED, CAMPUS?

god ⚡ peED: I cannot confirm or deny the existence of this washroom (ok fine it's the QNC one).

clarifiED: Everyone knows about the QNC bathroom. But my favourite bathroom will remain a secret 'til I shuffle off this mortal coil (nonetheless, here's a hint: it's in a building that rhymes with "Needless Hell").

RMS: WHAT IS YOUR FAVOURITE SOFTWARE LICENSE AND WHY IS IT THE GPL V3?

god ⚡ peED: My favorite license reads: "By using or distributing this software, you have condemned your immortal soul to eternal imprisonment by his Lordship, Satan. THE SOFTWARE IS PROVIDED "AS IS," WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED."

clarifiED: What.

NOT RMS: WHY IS THE CORRECT ANSWER TO THE ABOVE QUESTION THE MIT LICENSE?

god ⚡ peED: My favorite license reads: "By using or distributing this software, you have condemned your immortal soul to eternal imprisonment by his Lordship, Satan. THE SOFTWARE IS PROVIDED "AS IS," WITHOUT WARRANTY OF ANY KIND, EXPRESS OR IMPLIED. THE WRITER OF THIS LICENSE HAS JUST RE-USED THE SAME JOKE ACROSS TWO QUESTIONS."

clarifiED: Huh?

horrorSCOPES: SPEEDY SPRING 2020 EDITION

INSTEAD OF UNLUCKY NUMBERS, HOW ABOUT YOUR UNLUCKY BREAD?

Blah blah blah blah, stuff stuff stuff. What? I'm too lazy to think of an actual hook for this article. That's just how life is sometimes, so suck it up, butta-cup. I already know what you're here for; who the fuck reads the preamble to horoscope articles anyway? (I'll tell you: it's the same set of people who show up to their MathSoc program rep's office hours.)

ActSci: You conduct a risk assessment—pen, paper, spreadsheets and all—every time you step outside of your home. Keeps the mind sharp, you rationalize. And it keeps your worries at bay. Your unlucky bread: focaccia.

CFM: Now's a better term than ever to catch up on that sleep debt from last year. You know it takes four hours of sleep to make up for each hour lost? Your unlucky bread: poppy seed bagel.

CS: Your home WiFi will teach you the true meaning of betrayal. But it'll still be better than Eduroam. Fuck Eduroam. Your unlucky bread: maple oat banana bread.

Math/Business: The lack of structure in your life will take a toll on your morale. Have you considered putting on a suit jacket in the morning instead of shlubbing around in sweats? Your unlucky bread: whole wheat bread.

Math Studies/Undeclared: Without the distractions of a social life, you've had a lot more time to introspect and think. You finally make up your mind to take a term off. Y'know, so you can figure out what you're going to be doing in the future. Your unlucky bread: sour cream blueberry loaf cake.

PMATH/AMATH/C&O: You will have never been so touchy and moody in your life. It's alright. Just let it all out. Scream and shout as you drift through deserted streets. Your unlucky bread: slightly moldy Wonder Bread.

Software Engineering: You're going to really get stir crazy, if you haven't already. Channel that energy into baking. A few rounds of batter whisking will get you tired out. Plus you'll have forearms for days! Your unlucky bread: garlic naan.

Stats: You'll really get into gardening, whether in real life or in that godforsaken Animal Crossing game. You'll become obsessed with plant genetics. Maybe you'll be the next Gregor Mendel? Your unlucky bread: scallion pancake.

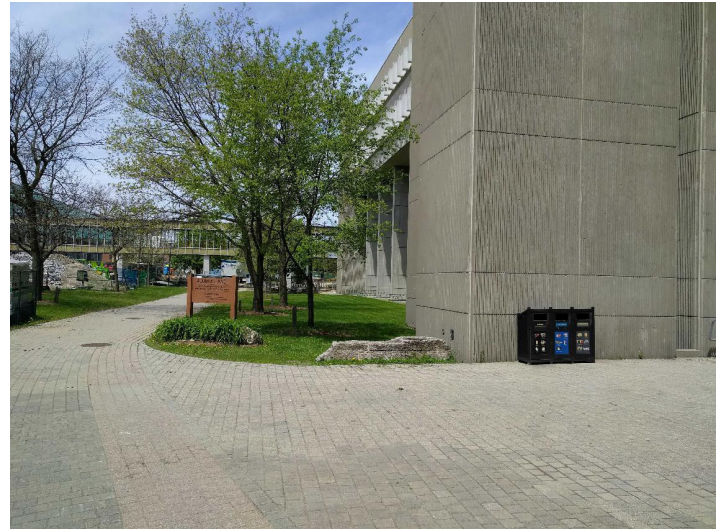
Teaching: Make a TikTok if you haven't already and have a try at Internet fame—you've got the looks, charm, time, and talent. Who cares about Chinese surveillance when you could have clout? Your unlucky bread: sweet molasses brown bread.

Ceci n'est pas filler.

A SURREALIST blackBOX

Finchey

SLC CONSTRUCTION UPDATE



Sandwich Expert

DATALEGREYA

When looking for fonts for, uh, purposes, I came across the curio that is Datalegreya. This mildly interesting font which lets you graph data in the middle of your text by plotting a dot between 0–3 at each point!

w|1h|2o|3 |2t|1h|2e|1 |3h|2e|1c|2k|1 |1w|0o|2u|2l|2d|3
|1u|2s|1e|2 |0t|2h|2i|3s|2?

looks like this in Datalegreya:

WHO THE HECK WOULD USE THIS?

This will definitely be very useful for visualizing things like:

before covid THIS TERMS JOBS now

It's like LaTeX features built into a font!

<https://fontlibrary.org/en/font/datalegreya>

OPERATION MEMPHIS: INSTALLING AND USING WINDOWS 98 IN 2020

INTRODUCTION

This all started one fine day, when the **mathNEWS** Instagram page posted, to general euphoria, that the next production night was coming up! After the celebrations had died down, I noticed something in the post text:

#tbt to twenty years ago when ... Windows 98 [was] alive and kicking

Well, now I'm mad. Whoever said Windows 98 is dead? Not me, certainly! I mean, I don't personally use it on any of my laptops, servers, mobiles, game consoles, smart fridges, or the like, but *come on, man*. It's not dead. And what if it is? Well, then... I will make it not dead.

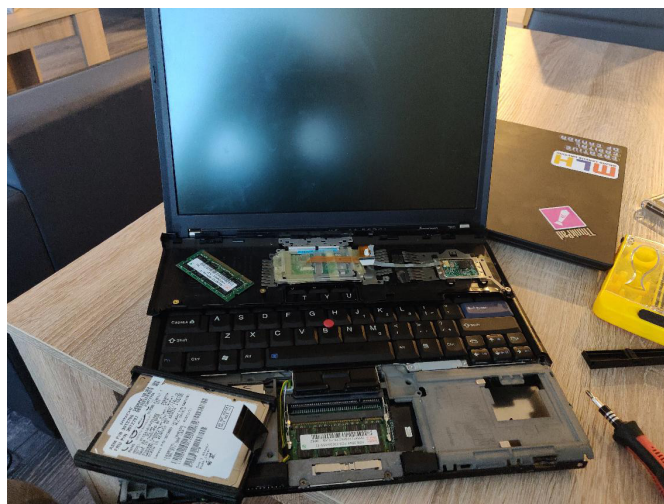
So I set out to install Windows 98 on one of my machines. Now, speaking of machines capable of probably being able to run Windows 98, I have two — my main laptop, that I do all of my co-op work on and probably shouldn't touch, and an old ThinkPad T60, affectionately named Tungsten, that I traveled an hour by ION to buy off some dude in Kitchener for forty bucks in November.

Now, while doing my co-op work on Windows 98 probably would have been fine (it is a perfectly capable and not-dead operating system after all), I decided to take the less headache-y route of using Tungsten. So I set to work.

PREPARATION

Now Tungsten had some modern day conveniences added to it after its purchase, so it could better run the more bloated operating systems of today. So it had a Core 2 Duo CPU, 240 GB SSD and 3 GB of RAM. And the thing you need to understand about Windows 98 is that it is a very sensible operating system — it will let you use any sensible amount of resources. And unless you're planning on making a super-computer cluster, you really don't need more than a single

processing core, 768 MB or so of RAM, and maybe 127 GB of storage. So Windows 98, being sensible as it is, will let you use up to this much computing capacity, and start to randomly crash, freeze, or in general get pretty unhappy, when you try to exceed these guidelines. So my upgrades had to come off.



I start by removing the SSD and replacing it with the 100 GB hard drive that the laptop had shipped with. Then I get rid of 2 GB of RAM, leaving me with 1 GB. You might notice that 1 GB = 1000 MB is a bit bigger than the maximum 768 MB. Keep that in mind for later. Finally, I turn on the machine to verify that it worked, and go into the BIOS settings and disable the second core, making this laptop a Core 2 Solo. (Fun fact: I'm not just kidding around, Intel Core 2 Solos were real processors! Look them up on Intel's ARK website if you like, that's their database of nearly every single chip they have ever released.) While I am here, I also set the hard drive mode from "AHCI" to "Compatibility".

Now we arrive at the problem of actually installing Windows 98. Normally this wouldn't be a problem at all; just take your

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UW'S BASTION OF ERUDITE THOUGHT SINCE 1973

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totally legit Windows 98 CD, put it in your CD drive and you're on your way. Thing is, while Tungsten has a CD drive, I don't have a CD to write to, and in fact have not seen a CD since 2015. I do, however, have a USB drive, so that is what I need to use to install Windows 98. The problem is that USB support was something very new to Windows 98 at the time of its release, and so it understandably did not support booting from USB as a valid way of installing Windows. After some digging on the internet, a lovely guide on a website called RMPrepUSB told me exactly what to do. Following its instruction, I go to a very shady looking website and downloaded a tool that promised to make me a bootable USB that would copy the Windows 98 setup to RAM, then boot off of the virtual RAM disk. It sounds crazy, but hey, so were the **mathNEWS** Instagram page handlers for suggesting that Windows 98 is dead. *[Editor's note: I should have kept my mouth shut.]*

Now, like any reasonable operating system, Windows 98 does not allow you to format hard disks while it is running. So the proper procedure to format a hard disk under Windows 98 is to *not* start the Windows 98 setup on first boot, as you may be tempted to by your habits from Windows 2000 or later. Rather, you drop to a DOS prompt, and format your hard drive the way a real man¹ does it—using the fdisk DOS utility to create a new filesystem, then the format.com command to slowly (enough to go through two episodes of Brooklyn Nine Nine) format the entire (*sic*) 29,85.28MB.

Now, you might notice that not only the size, but also the comma placement of this numeric value looks very wrong—adjusting the commas, it translates to approximately 2.91 GB, rather than the 100 GB that my hard drive contains. I am not quite sure why this is the case, but since I am writing this guide as the process goes along, I guess we will find the answer to this together. After formatting is done, the correct size of the disk, with the correct comma placement: 95,369.97 MB, is correctly detected, and the utility asks me for a drive name. I name the drive WIN98_2020, and we're done formatting!

INSTALLATION

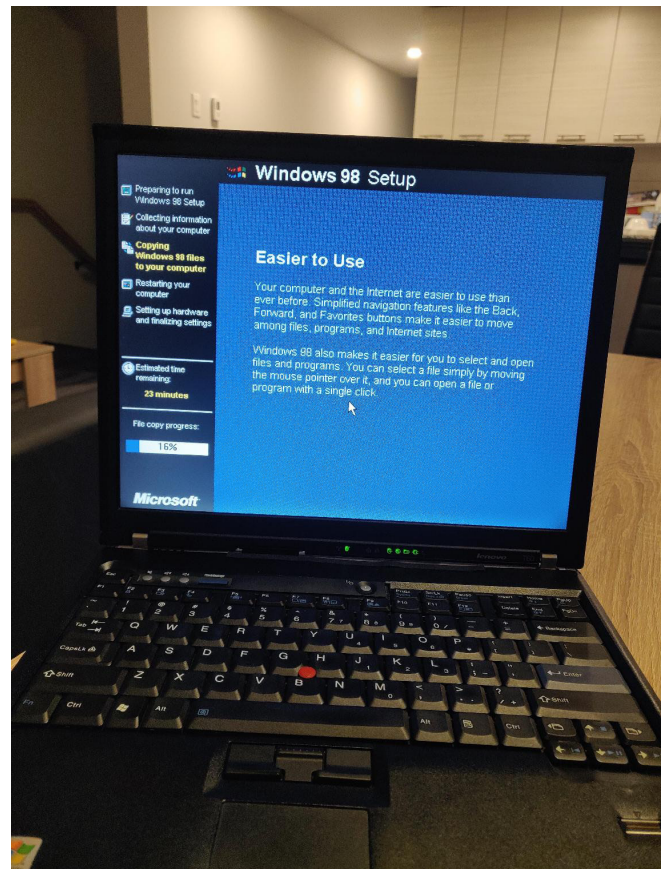
Now for the fun part—we install! We shift to the B drive, which is our virtual RAM drive from earlier, and type setup. The screen fades to blue, and we meet ScanDisk, the bane of many a Windows PC. ScanDisk quickly sifts through the hard drives and realizes that while my freshly formatted C: drive is pristine, there are errors on D:, which is my USB drive. These “errors” are caused by the incompatibility of RMPrepUSB's format with the Windows 98 ScanDisk—I suspect that we will have to file a bug report to get this thing fixed. For now, we type “setup /is” to skip the ScanDisk check and proceed.

Now for the fun part—we install! Huh, I have this weird feeling of *deja vu*... Anyway, the setup process is fairly straightforward, I just click “Next” a bunch of times, until I hit Setup Options. Here, setup asks me what kind of setup I want—I select Portable since this laptop is actually pretty portable. I click Next a couple of more times, set the

Computer Name to Tungsten, and click Next more. Finally, it starts copying files.

And then disaster strikes. CAB Error? Nani the heck? How could this happen? Internet says it might be an Ultra DMA error; I disable DMA in the BIOS, but it's the same. Internet suggests I copy the setup files to the hard drive and run them from there; I don't know how the DOS copy command works, but somehow when you copy a folder with it it turns into a file?

So it turns out that my totally legit copy of Windows 98 was actually a bit messed up. Makes sense; there's nothing wrong with the operating system, after all! It must have been a bad disk image. A different disk image works perfectly, and so I proceed with the setup. I fill in my username and company (tendstafortytwo and **mathNEWS** respectively), set up the timezone, and off we breeze through the setup.



And before I know it, here I am, at the Windows 98 desktop! A perfectly modern operating system running flawlessly on my laptop. At 640x480 resolution, 16 colors, very little USB support, and I believe there's no network support at all. We need drivers.

POST-INSTALL: DRIVERS, GAMING AND PRODUCTIVITY

Now, for some mysterious reason, Lenovo thought that nobody would ever need drivers older than Windows 2000 for the ThinkPad T60. For a brand known for their internationally sold lineup of business machines, in my opinion it's a

pretty big oversight that they didn't account for businesses potentially needing to run a modern OS like Windows 98! Thankfully, the internet comes to the rescue again. After some scouring, I find some “generic” VGA and USB drivers; drivers that will kinda-sorta-mostly work with most graphics and USB controllers. So I download these drivers onto a separate machine, put them onto a USB stick, and... Right. There's no USB support. Heck.

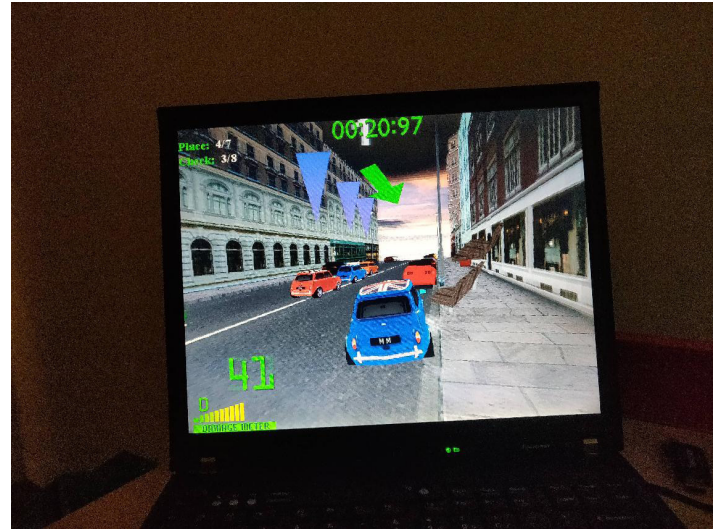
Modern as Windows 98 may be, we all know that Linux is the superior operating system, and sometimes it can come to the rescue of a stranded Windows setup in need. So I load up Xubuntu 20.04 (regular Ubuntu had no chance with 1 GB RAM) onto a separate USB drive, boot from it, and use that to copy the drivers onto Windows 98's C: drive. For good measure, I also copy the entire contents of the Windows 98 setup disc; it has a folder named “drivers” so maybe we'll find something we need there as well. I boot into Windows 98 and install the drivers, and reboot... And all goes to hell.

It starts off normally with the Windows 98 screen. Then the screen segments itself into alternating rectangles of color and black. Then the desktops load... Five of them tile up along the top of my screen, all scaled down to fit in that space together. And the rest of the space beneath them is taken up by varying shades of bugs and errors. I somehow manage to use the desktop enough to find and click the Uninstall button for that driver, and revert back to a working, albeit still low-resolution state.

Well, at least I have USB, right? I can load up some games onto my computer and have some fun! Well, no, not really. I put the USB drive in, and it seems to work fine at first — the computer detects it, installs the right driver automatically, and shows it on the Safely Remove Hardware button... But when I open My Computer, everything freezes. I try again and again, different methods too — opening it in My Computer, trying to open it in DOS, formatting it before use... Nothing seems to work. All seems to be lost. Were the **mathNEWS** editors right after all? Was Windows 98 truly dead?

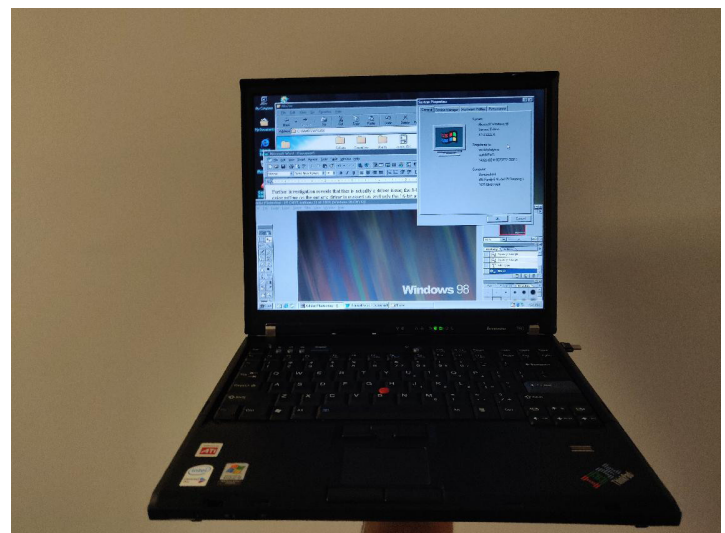
In a moment of desperation, I plug in my other USB drive. First try, it works perfectly.² Huh. Alright then. I format it, then copy over some of my favorite computer games — *Midtown Madness 2*, *Need for Speed 2*, and *Doom 2*. To my delight, *Midtown Madness 2* works perfectly! Just as I remember playing at my dad's office when I was a kid. *Need for Speed 2* and *Doom 2* launch with no problems as well, and run without any stuttering... But all the colors seem to be inverted, so it looks like I am playing in some sort of barfed up

hellscape... Appropriate for *Doom*, maybe, but *NFS* needs some more work.



Further investigation reveals that this is actually a driver issue; the 8-bit color setting on the generic driver is messed up, and only the 16-bit and 32-bit color settings work. It is a testament to Windows 98's newness that all the newer and richer color modes work just fine.

What is not messed up, however, is how much you can get done on Windows 98! Microsoft Office 97 and Adobe Photoshop 5.5 both install and run beautifully on this machine, and allow you to write documents and spreadsheets, create and edit professional photographs, and so much more. The setup process was seamless and the tools are very capable; so capable, in fact, that I was able to create a pretty sweet looking desktop wallpaper for myself in Photoshop! Needless to say, if you're a productivity beast, you are going to love Windows 98.

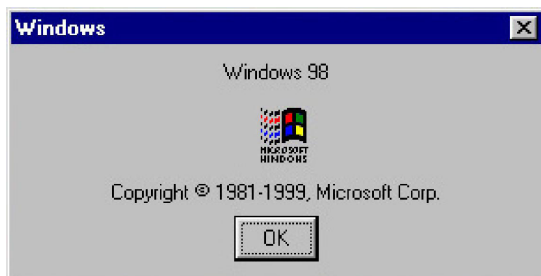


A feature is just a documented glitch.

PROF. IAN MUNRO

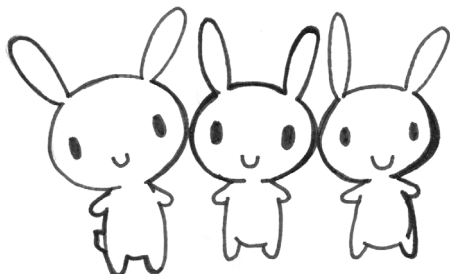
In the end, I think I can call this entire process a complete success. Other than certain 3D acceleration issues and the inability to connect to the internet—both of which can be resolved with the right hardware purchases, since these are both driver issues—Windows 98 is easy to install, fun to game on, and allows you to get serious work done.

Needless to say, Windows 98 is *not* a dead operating system. In fact, in some ways, it is even more alive than the Windows of today. The cute little animation of each menu sliding out, the slow complete redraw of every window when you move it two pixels to the left, the sky-blue welcome screen... It lends itself a quirky personality that today's polished, corporate, faceless operating systems simply don't have. Even when I struggled against it, dealing with unformatted drives and inverted colors and whatnot, I could never get mad at it the same way I could at Windows 10 or Linux. When it was slow, it felt tired, and when it was fast, it felt energetic. When a dialog box popped up, it felt like a cute pet dog, climbing at my feet and trying to get my attention. It's hard to describe, but someday, you should do the same: find a machine, a real machine, that you can spare, and put Windows 98 on it. Not a virtual machine; I've done that before, it doesn't compare. Use Windows 98 on real hardware, and you will realize that not only is Windows 98 alive, it is perhaps more alive than anything else you will ever experience through a keyboard and a mouse.



tendstofortytwo

1. Or woman, or person... You know, a real human as opposed to one with a nonzero imaginary component.
2. Apart from a small bug where after a few minutes the drive would disappear and if any file operations were carrying on at this point it would bluescreen. But that's okay, those few minutes were generally enough to copy things over to the hard drive and proceed from there.



“HI CAN SOMEONE BE MY ZOOM BUDDY” — REQUEST FROM AN ALMOST-FROSH

When I first applied to Waterloo, I thought I was signing up for fun courses with brilliant profs, a frosh group of math enthusiasts (where I'd find my future soulmate), and endless adventures with the perfect roommate that I'd automatically get paired up with. Then I'd find out about **mathNEWS** and spend the next four years writing articles complaining about my unfulfilled expectations.

Unfortunately, a worldwide pandemic interrupted my carefully constructed plans. Goodbye Orientation Week. Goodbye living in dorms like it's Hogwarts. Hello LEARN and a regrettably flat ass.

Now, I'm stranded at home—with my diploma lost in the mail somewhere—and nobody got time for high school friends anymore. Does it get a bit depressing? Sure, sure. But I'm sure it'll be better once I start at Waterloo! Though, my internet connection is looking forward to cockblocking me once fall term starts... So, to be safe, I would just like someone to explain to me: How do I use Quest as a dating site to meet my SO?

A cool pen name

(I mean, I'm not lonely or anything.)

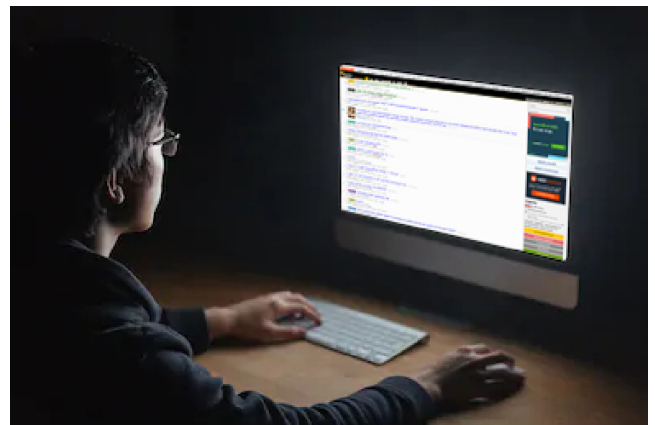
(No. No, no, I have friends.)

(...)

(But like, I wouldn't... mind... someone shoving their tongue down my throat ok bye call me.)

CORONAVIRUS COMPLETELY CHANGES MAN'S LIFESTYLE

“I HAVEN'T LEFT THE HOUSE IN MONTHS,” HE SAID



UW Unprint

A FEW THOUGHTS ON SPRING 2020 ONLINE

Ah, Spring 2020. In light of COVID-19, the University of Waterloo suspended all in-person content for the term and moved it all online. It's UWaterloo's first online academic term ever, and we're living it.

“Online-content” historically seemed to me as a distinction reserved for less-involved classes like PD or complementary studies electives. In a separate category were the *core* classes of a degree, high-workload, difficult offerings which might involve significant projects or lab work. Now online is the new in-person, and classes have adapted or cancelled.

It's been far from sunshine and rainbows for me so far: online lectures lack many things, especially when they're pre-recorded. Gone are forms of structure provided from having a mandated timetable. Vanished are the spontaneous encounters with classmates between classes. Departed are opportunities to ask the prof a question after they explain a concept. Some days, the course load seems lighter, but most days, it feels heavier.

I've heard from professors that the university has encouraged asynchronous (pre-recorded) content rather than live content, since students can be anywhere in the world right now. It's understandable, but I do miss the camaraderie of us all sitting through a long lecture together. It's a little less dynamic. It's a little lonelier.

I think that loneliness will be a tough challenge this term for many people, including myself. When there's far fewer people to talk to in person, it can be tougher to do many things. No more taking a friend to ice cream to console them after a brutal midterm, or talking over problems and hopes at 2 AM in the residence washrooms. Keeping in touch online is a great idea, and I'd recommend reaching out more frequently rather than less. Friends, acquaintances, we all need some connection in our lives.

Robbed would be the word that describes how I felt when I learned spring term would be online. I greatly enjoy campus life, and to miss a term of the short four academic years I have here was saddening. It's a minor thing compared to what other people are going through right now, and I should be grateful that's the greatest sorrow the pandemic caused me, but it's a sorrow nonetheless.

Ultimately, there are some upsides—a silver, or perhaps copper, lining to the dark, dark cloud we're all under. On a pragmatic level, we have more flexibility than ever, and we'll save commute time between classes and campus by staying at home. From a different angle, we'll get the rare opportunity to learn how to operate under vastly different conditions of online learning.

This may be the first time ever that a total shutdown of in-person schools has happened, yet enough technology exists to continue learning. Classes have had a short runway to shift online, and we're part of a trial run of virtual education on

an unprecedented scale, meaning that there'll be plenty of issues to iron out, but also perhaps a bit more leniency. It will be a challenge to learn remotely and independently, but once we prove ourselves, we'll know we have the capacity to learn anywhere.

It'll be less fun. It'll be less exciting. It'll be more work. But I think this Spring 2020 term will be one that leaves us talking for a long time yet.

Stay safe, **mathNEWS** reader!

CC

NO ONE ACTUALLY KNOWS WHAT PURE MATH TERMS MEAN, SOURCES REVEAL

WATERLOO—This article is the result of several interviews with mathematicians. For their own safety, their names have been kept anonymous.

It was at a conference. They're talking about extremal sets and Ramsey theory or whatever, and finally I give in and I turn to the person next to me, and I ask “What is up with this stuff? Do you know what's going on?” And he looks at me like I just killed his mother. The night ends, and I'm on the way to my car, and they just put a bag over my head. I come to and Terence Tao is there, and he's got a revolver to my temple and he's telling me to stop asking questions or someone's going to get hurt. You should do the same. I've already said too much.

ANONYMOUS SOURCE

It's a rite of passage, you know, when they let you make up your first one. You pay your dues, you write your proofs, and then one day they invite you for a “talk on a new subject.” It's basically an initiation. They invite you up on stage, and then it's all you. I remember my first time, I just spouted out “infinite isometric tensor spaces.” They all burst into applause. Greatest night of my life.

FIELDS MEDAL WINNER

You don't understand man, they're everywhere. When I found out, I couldn't take it, I tried to tell people. They find out fast. When they finally caught up to me, they locked me away. Ten years row-reducing matrices will change someone. I could be killed just for talking to you. But people have to know. It's all a lie.

FORMER AMERICAN MATHEMATICAL SOCIETY MEMBER

UW Unprint

ASSIGNMENT 6

THIS ARTICLE WAS LEFT BY A TIME TRAVELLER — TURNS OUT WHEN YOU TAG A mathNEWS ARTICLE FOR V145, IT DOESN'T END UP IN V141.

Before reading week (about a month ago now), the CS 241e ('E' possibly standing for either Enriched, Experimental, Easy, or "yEs! I love compilers!") class was given an assignment. This was Assignment 6: Nested Procedures and Closures, and proclaimed, by our professor, to be the most complex and difficult assignment so far.

Originally, the due date for the assignment was five days before the October 30th midterm, to have us stop working on the assignment to focus on the midterm instead. A late penalty of 25% was in place, meaning that only 25% of marks would be lost for submitting up to two weeks late. After some debate in class, our professor elected to extend the deadline to *November 22nd*. How this decision was reached, I know not. All I know is that a collective sigh of relief was raised from the class as the announcement was made.

I, having procrastinated on the assignment after hearing about the extension, began working on it just last week. I had some of my classmates claiming they spent "twenty hours!" or "all of reading week!" crunching through Assignment 6, but didn't fully believe them. How could I, expert at doing Assignments 1–5 quickly, not finish Assignment 6 in a day or two at most?

I began working on the assignment, and wrote code for the whole first half concerning Nested Procedures. That hadn't taken too long! I wrote a short, simple test case and tried to run it. A failure. I had encountered bugs before, and went in to try to fix it. After quite some time tweaking code, my single easy test case still wouldn't pass, and I was getting tired. I left the assignment for the day. A few hours of work, and not a single mark to show for it.

It was back to the drawing board, then. The next day, I decided to delete all of my existing code for Assignment 6 and begin anew. With a slightly better understanding of how everything worked, I managed to make my single test pass after two hours of rewriting.

I was euphoric as I submitted my code to Marmoset for automated testing. I twiddled my thumbs for thirty seconds, and Marmoset spat out a response. Zero marks.

After another half hour hunting down the bug, I submitted to Marmoset again, and was rewarded with a splendid twenty marks out of eighty for my efforts. It was approaching 11 PM at this point, and with 7.5 hours of classes starting at 8:30 AM the next day, I decided to sleep.

The weekend came, and the struggle with the second half of the assignment, Closures, began. Once again, I filled in a first draft of code for the whole assignment, and wrestled with it to make a second simple test I had written pass. Issue after issue cropped up. Some code which I had written in Assignment 3 and Assignment 5 turned out to be slightly buggy, and since Assignment 6 depended on all the previous assignments, it

was also buggy. After five hours of grueling debugging work, involving stepping through assembly code execution line by line and copy-pasting memory addresses to figure out where my functions were, I figured out the issue. Two lines of code had been called in the wrong order.

Victory! My test case passed now, and surely Marmoset was going to grant me my missing marks. Marmoset decided that I was not, in fact, worthy, and slapped me for de-referencing an invalid memory location. I was sick of Assignment 6 for the day, and went to bed.

Cue today. Day three of me versus Assignment 6. Today was a sparring match of sorts. I fixed the invalid memory address problem, and submitted. Marmoset said no, and berated me for not replacing certain chunks of code properly. I looked into my code again, figured out it was an issue with old Assignment 2 code, and passed the ball back to Marmoset. I was now three hours deep in this coding session when Marmoset fired back:

```
java.lang.AssertionError: assertion failed
```

Cryptic. I decided it was time to rant on **mathNEWS**, then sleep once more. Four days until the assignment is due.

CS 241e is quite fun, and I would recommend the course for those interested in learning how your everyday programming language actually runs on a computer. However, the moral of the story is: if the professor extends a deadline by an entire month, be afraid. *Very afraid.*

CC

WHAT IF WE...

created a group...

where we all pretend to be geese

ahaha, just kidding...

unless..?

boldblazer



Computer Science: The Gift of Recursion

Story by MathSoc | Art by Isabella Scott



Enjoy this comic from MathSoc's educational cartoons series: *The Gift of Recursion* by MathSoc and Isabella Scott. This cartoon is designed to help clarify recursion for early-year CS courses. If you have any feedback, are interested in contributing to

future cartoons or have suggestions for future topics please contact gjorok@uwaterloo.ca.

Gavin Orok

MAYANS APOLOGIZE FOR ENDING CALENDAR EIGHT YEARS EARLY

CHICHÉN ITZÁ, MEXICO—The Mayan civilization has issued a formal apology for miscalculating that the world would end in 2012 instead of 2020, a mistake that led to earlier-than-deserved panic, conspiracy theories, and multiple badly-directed disaster movies.

“Upon further review, we have determined that our entire calendar should be shifted by about eight years so that it ends in 2020, rather than in 2012 as we originally believed,” said a spokesperson for the ancient Mesoamerican civilization. “We assure you that the persons who were responsible for this grave error have been scheduled for our next sacrifice.”

2012 was supposed to end with meteorite strikes, geomagnetic reversals, planetary collisions, and/or alien invasions, depending on who was posting most frequently on your Facebook feed. Alas, none of those ever happened, with the most noteworthy catastrophe of the year being the release of the Wii U. On the contrary, 2020 has seen devastating bushfires in Australia, geopolitical tensions in the Middle East blowing up, Brexit, multiple plane crashes after a relatively safe 2019, the rise of a killer virus, Brexit, and several tragic

public transportation strikes that left hundreds of thousands of students without a way to get to school—and we're not even halfway through the year.

News of the Mayan apology brought a slew of announcements as companies scrambled to profit over another looming doomsday crisis. McDonald's announced that the proportion of preservatives in its menu items would be increased to 100% from 99% so that they would be able to sustain human life well past the apocalypse, while Wendy's announced that it would start slaughtering cows in-store so customers could experience extra-fresh beef before they died. The History Channel also announced that it would cease all regular programming and exclusively show reruns of its 2012-related programs and the movie *2012*, though no one noticed any difference.

As of press time, it is uncertain how an extinct civilization could have transmitted such a message to modern-day viewers, leading to speculation that the Mayans really were aliens.

quantum goose

THE 2016 CLASSIC TETRIS WORLD CHAMPIONSHIP FINAL

Okay, I like Tetris a lot.

And I was going to write this article on several different aspects of Tetris including, but not limited to: a brief summary of the history, an analysis of the 2016 Classic Tetris World Championship Final inclusive of the **mathNEWS** perspective, a review of the names of each of the pieces (called tetrominoes), a list of all easily accessible ways to play Tetris in 2020 (that I've tried), and a tribute to the defunct website TetrisFriends.com (RIP).

However, as you may be able to tell from my list, things clearly got out of hand. Instead, how about just the 2016 Classic Tetris World Championship Final.

First, some backstory: I don't write. I've never actually "written" an article for **mathNEWS**, and I only started participating at all last term. I'm the one who destroyed **mathNEWS** with weeaboo propaganda (**mathNEWS**-chan), if anyone remembers that at all.

Anyways, at some point, I ended up asking what to write and, at another point, it ended up with me talking about wanting to write about Tetris.

One of my friends DMed me a few days ago wanting to play Tetris Online Poland (actually a pretty good way to play tetris on PC; free with probably the best multiplayer since TetrisFriends (RIP)). We joined a room and, like half an hour later, my friend starts freaking out because apparently he watches a Twitch streamer who plays Tetris that joined the room.

Mentioning this spiraled into talking about Tetris streamers, then to Tetris YouTube content, then to the 2016 Classic Tetris World Championship Final. I don't know if you've seen the 2016 Classic Tetris World Championship Final but, if you haven't, you *should*.

On YouTube, you can watch it for ~36 minutes of your time *which is exactly what everyone at production night ended up doing*.

It stars our two *absolute lads*: Jeff and Jonas. It also appears that the 2016 Classic Tetris World Championship Final took place in a mall food court, by inspection. Now, a player analysis from production night based on nothing in particular (especially not facts):

JEFF

- Jeff is a true gamer, with his gamer headphones and gamer t-shirt. He exists solely to play Tetris and that is all he does with his time.
- Jeff is also a robot. He planned the entirety of his game from the start. He does 1000 calculations per minute.
- There's a few bugs in his code, sadly. He may have been overheating as well.
- Jeff looks like handsome Squidward.
- Jeff plays a clean game with a clean board, except when he sometimes doesn't.

JONAS

- Jonas works full-time. He has a wife and kids. He is not a true gamer.
- Jonas is at the 2016 Classic Tetris World Championship Final during his lunch break. He is constantly worrying about needing to make it back on time. He is constantly on edge.
- The man sitting next to him, who is partially cropped out for the entirety of the video, is Jonas' parole officer.
- We did not discuss what crimes he may have committed.

Some highlights of the game include some very nice cleanups from Jonas, an impressive early-game T-spin from Jeff, the *iconic* "Tetris for Jeff!" statement from the announcer, and the woman in the audience wearing a Tetris dress.

I am completely unwilling to spoil the outcome of the 2016 Classic Tetris World Championship Final [*Editor's note: oops, don't read the mathASKS then*]. However, the ending was contested by the viewing party (us).

We have come to the conclusion that it simply had to be this way as the potential rage of the winner (if he had lost) would have been too great and there was immense fear there would have been no more Classic Tetris World Championships to come.

alyssnya

This blackBOX was here all along, I swear.

A mathNEWS EDITOR WITH NOTHING TO HIDE

THE NEXT N WORDS

I ran out of the room anyway, after that, though I was spirited enough from that guy's comment that I didn't go sulk into the girl's bathroom. I just wanted to wander in the hallways to think. I do that a lot. I don't know what I mostly think about, though. Of course, I know I think about my sister, and I always wonder what she would have been thinking about when she wandered around the hallways of this very high school, and if she knew she was going to become insane. I don't know whether it's worse to know that you're going to become insane, like me, or not to know and just eventually do, like her. She leaves a bad taste in my mouth, but I can't say I blame her. It's not like she went insane *on purpose*, and I can't have expected her to take the same precautions as I am doing now, because it's not like she knew. In the end, I might just think of her as my poor sister, and forgive her for everything, but not yet.

I also spend a lot of time thinking about other people. Sometimes I don't even know their names, and I still think about them. I can't really help it. They pop into my head and then I'm forced to entertain them. At that moment, I was thinking about my cooking class partner, which was real convenient. I was thinking about how she was an NPC, too, but I still sort of liked her. I mean, she still said the most inane things sometimes, but overall, if you asked me whether I tended toward the side of liking her or not, then I would have to say I liked her more than not, and I didn't know why. I was pondering why. I was worrying that I was just being shallow and it was just her appearances, because she was pretty, though not like my sister. My cooking class partner has milkwhite skin and thin eyes like slits, and she always wears her hair in a ponytail. If you ask me, she is the prettiest girl in the whole school, even though she's got a forehead full of zits.

Anyway, like I said, it was real convenient that I was thinking about her, because right there, right then, I was thrown into the girl's bathroom. I had said I wasn't going into there to sulk, but strangely I ended up there even still. Other than going into the girl's bathroom for the occasional sulking, I try to avoid it as much as possible. I can't be around groups of pretty girls for too long without staring at them awkwardly, which would just be completely unacceptable in a bathroom. And they remind me too much of my sister anyway, when they're just standing around putting on makeup and talking about boys. So I didn't *want* to be there, of course, but first of all, I was trying to figure out why I was there when she appeared. The milkwhite skin, the straight teeth and energetic ponytail, like I said, it was real convenient. There were no girl groups around, since it was class time, and so we were completely alone, and I had to stare into her eyes, so squinty they seemed pure black. "Oh, it's you," she said, and she looked kind of shaken by my appearance, or maybe I was imagining it. "Sorry. I thought you were — never mind."

Maybe I was elated because of that guy and how he devoured my *chakchouka* or maybe it was just because I had been thinking about her earlier in the hallway, but for some reason or another, instead of just walking away, keeping my head

down and my tail between my legs and keeping quiet, instead of all that, I just said her name. "Rebekah." And then she nodded, and said, "Yeah, alright, I didn't plan for this, you'll do." And then she kept talking and talking. That's the one thing that I hate about all NPCs, all of them. They keep talking about things that don't matter and they can never get to the point. She kept saying how she was so *weird*, and she didn't want me to think that I was so *weird*, but she just had to tell someone. And she was bringing up all of those crappy reverse-harem Japanese visual novel mobile games she'd been playing in class, like I cared what she'd been doing, and I was thinking about what a terrible mistake I'd made. My sister warned me this would happen, back before she went insane. That people would just stop her out of nowhere and unleash their thoughts as a torrent unto her and she'd have no choice but to listen. But really this was the first time it had happened to me in a while, and I wasn't prepared at all. I wasn't going to bolt, like my sister eventually had taken to doing, but I didn't particularly want to just sit around and listen. My cooking class partner was still going on, talking about how she preferred older guys but not *that old*, but *he* didn't really look that old and definitely didn't act it, and I still wasn't getting it. But finally she stopped, and said, "No excuses. I'll just say it. I'm in love with our Japanese teacher."

I met Rebekah in ninth grade. It's federally mandatory to study French until eighth grade, but after that, we can pick whatever language we want. Most people pick French after that, anyway, since it's an easy choice, including my sister, who went on to win several speech competitions with her outstanding charisma and sultry voice. I picked Japanese. I'd say it was because I wanted to avoid anything my sister did at all costs, but I'd also be lying if I didn't say the Japanese cartoons I'd been watching back then had nothing to do with it. Of course, if you know anything about **anime** at all, you'll know that the people who watch it are the most pathetic and annoying types of NPCs ever, who all think they're so funny and strange just because there are sometimes some breasts onscreen. They don't know real insanity. They haven't experienced it the way I have.

I don't watch *anime* anymore. Really, I only grew up watching it, since the 'rents forbade my sister and I from watching TV, and we had to entertain ourselves in other ways. Back then, I watched a lot of those shows that are about a group of high school girls living their simple ordinary lives. I'm not ashamed to admit it. For a time, I actually thought my high school life would be like that too, full of happy moments and trite worries that seem serious in the moment and memorable people that were all quirky and funny in some way. I guess I'm sort of glad that my sister went insane, so I didn't come to high school having those sorts of delusions. Those NPCs who chose to study Japanese were all like that. It's depressing, really, to be around that kind of NPC. I can't even despise them, because they're all so pitiful. Rebekah was one of them, too, and while she sat next to me the whole year in ninth grade, she was always playing those reverse harem visual novels on her cell phone. Well, of course, I didn't really care

what games anyone played on their cell phones, but she was always making it such a big deal, telling me about how she was so weird and edgy for liking two-dimensional men over real boys. I didn't even care about the goddamned game. That's

what I hate most about NPCs. Their entire lives just have to be defined by something or the other.

cy

N THINGS WRONG ABOUT MY SPRING TERM WORKSPACE SETUP

- My laptop on my laptop cooler on the box it came in on the coffee table in my living room.
- A wireless mouse that doesn't work like it used to, probably due to the fact that I keep slamming it on the mousepad in frustration every time it doesn't work like it used to.
- My desk piled high with stuff I still haven't dealt with since before last term, now piled with even more stuff accumulated since then.
- The sofa which has basically become my workspace. Side note: I really need to clean up my desk.
- The French textbook for FR192B that I borrowed from a friend because mine is still in Waterloo, which has become outdated now with the release of another edition, but the prof allowed me to still use it for this term.
- A longing desire for my physical copy of the Linear Algebra course notes which is in storage in Waterloo, leaving me to resort to an inferior digital version supplied through Learn.
- A Faculty of Mathematics branded clipboard thing that I now use to actually write and hold my notes in, which I haven't found a use for since obtaining it on my 1A term on the account that I've forgotten to bring it back to Waterloo each subsequent term.
- A camping head-mounted flashlight I use when I need to take notes in the dark at night because everyone else at home is sleeping.
- My one binder with what remaining lined paper I have that is not still in Waterloo in storage, and the fear that something bad might happen to the remaining 2 year supply of lined paper I bought for less than \$2, 2 years ago.
- My phone used to listen to music or Youtube videos when not watching lecture videos; basically my ears are constantly listening to something when I'm not sleeping.
- A neck pillow I've used on every plane trip I've taken, that I wear while studying, on the account of the fact that my posture probably isn't the best when using the sofa and coffee table as a workspace.
- A distinct lack of a source of water around the workspace, and the forgetfulness of me to hydrate frequently due to all the studying and assignments I'm working on.

I rate this workplace setup a “Not Recommended” out of 5 stars.

boldblazer

MATH MAJORS AS DEDICATED SIDE B TRACKS

Act Sci — This is What They Say

Applied Math — Window

C&O — Felt This Way

CFM — Now I Don't Hate California After All

Computational Math — Felt This Way

CS — Let's Be Friends

CS/BBA — Comeback

Data Science — Let's Sort The Whole Thing Out

FARM — Summer Love

Math/BBA — Solo

Math/Business — Always on My Mind

Math/CPA — This Love Isn't Crazy

Math Finance — Fake Mona Lisa

Math Physics — Window

Mathematical Studies — Comeback

Math/Teaching — Heartbeat

Pure Math — Stay Away

Statistics — This is What They Say

Undeclared — Stay Away

Stream Dedicated Side B

DJAO:

Although the flurries and whirlwinds sharpen little by little with each passing moment, Ken maintains a brisk, deliberate stride through the barren street. Head poised straight ahead and one hand firmly gripping his satchel, he carries a straight, bold posture about him.

He stops in his tracks, planting his sandals into the layer of sleet. He can feel it now, senses sharp as ever: djao's impending arrival. His suspicions are all but confirmed seconds following, as he catches the faint cries of the Sailor Moon opening theme, its frequencies crawling their way from seemingly all directions.

It's time.

Suddenly, a super magic box containing various runes materializes, superimposed on the ground behind Ken. From it, the

feared C&O professor takes form, pulverizing the surrounding pavement in a coordinated, anime-fueled rage, coating it in a thin layer of isogeny residue. Ken holds his ground. With confidence and vigor, he reaches a hand into his satchel for his prized MATH 145 Course Notes: his sole vestige of surefire dominance against an ever-powerful djao.

Pebbles and pocket sand; zip. His hand reaches the bottom of the bag, now collecting its own layer of sleet. Unraveled and disheveled, his gaze bolts above to djao, the colossus looming over with a devilish grin, MATH 145 Course Notes in hand.

What will he do now, supermagicTesseract?

jeff

TOP 10 EUPHEMISMS FOR SEXUAL INTERCOURSE

On thoughtcatalog.com, one can find an article by Jim Goad published on the last day of 2014, titled "400 Euphemisms For Sexual Intercourse." Goad wastes no time in making his point, listing off 400 euphemisms for good ol' PiV at Mach 20 speed. It's alphabetized, free of chaff, and full of gems, making it a masterwork of listicle canon. In this humble spinoff, I shall present to you the top 10 euphemisms on Goad's list. Are you ready, reader?

10. RIDING THE BOLONGA PONY

It rhymes! But it's not nearly as good as the following pony-based euphemism.

9. RIDING THE BONY EXPRESS

It's a pun! That makes it just slightly better than the preceding pony-based euphemism.

8. PUTTING RANCH DRESSING IN HIDDEN VALLEY

You can taste this euphemism on your tongue. Rich and creamy.

7. TAKING GRANDMA TO APPLEBEE'S

Such an innocuous sentence. How could it possibly be a double entendre? Honestly, I still don't understand how this is a euphemism for intercourse, which should be a testament to the humongous genius brain of the person who thought it up.

6. BISECTING THE TRIANGLE

This is one for the mathies like us.

5. DOING SQUAT THRUSTS IN THE CUCUMBER PATCH

This one is nice. The imagery fits well and it realistically reflects the physically demanding nature of intercourse. Plus, cucumbers are so refreshing.

4. DISAPPOINTING THE WIFE

I appreciate self-awareness beyond all else.

3. JOINT SESSION OF CONGRESS

There are four euphemisms that Goad lists which contain the word "Congress." I like this one the best, as it implies that the bicameral legislature of the federal government of the United States is sexy. Which it is decidedly not, unless you're one of *those* people who get turned on during a State of the Union address.

2. BRINGING AN AL DENTE NOODLE TO THE SPAGHETTI HOUSE

The juxtaposition of pasta, pussy, and penis in this one is pure perfection. Never has an al dente metaphor been so wonderfully incorporated. Never has the squelchy sound of spaghetti noodles drenched in sauce been so applicable. This is a heartfelt tribute to Italian culture.

1. PRESSURE-WASHING THE QUIVER BONE IN THE BITCH WRINKLE

Pressure-washing the quiver bone in the bitch wrinkle. Pressure-washing the quiver bone. In the bitch. Wrinkle. *Bitch. WRINKLE.*

Finchey

THIS IS MY FIRST TRY AT BEING gridMASTER, SO GO EASY ON ME

gridCOMMENT 143.1

Since god ⚡ peED took over the mastHEAD, I suppose I've got to do my rambling in the gridCOMMENT. I'm the de facto gridMASTER this issue? I do like word games, but I've never been good at crossword puzzles. I usually have to look up the answers online to finish them. Yes! I confess!

The gridWORD below is from V87i4, published on November 2, 2001. I don't really know what's going on with the cryptic grid clues. If you figure it out, could you tell me? Shoot the mathNEWS Instagram account a DM. Also, the solutions to this week's gridWORD are on the next page. Unfortunately, we

can't give out our usual prizes for gridWORD submissions this term. Sucks, I know.

Here's this week's gridQUESTION: "How much wood could a woodchuck chuck if a woodchuck could chuck wood?" Send us an answer to the gridQUESTION to mathnews@gmail.com by 6:00pm ET on June 8 and you'll get featured in the gridCOMMENT of the next issue. Sounds nice, right? It's kind of like a reverse mathASKS, if you think about it...

clarifED

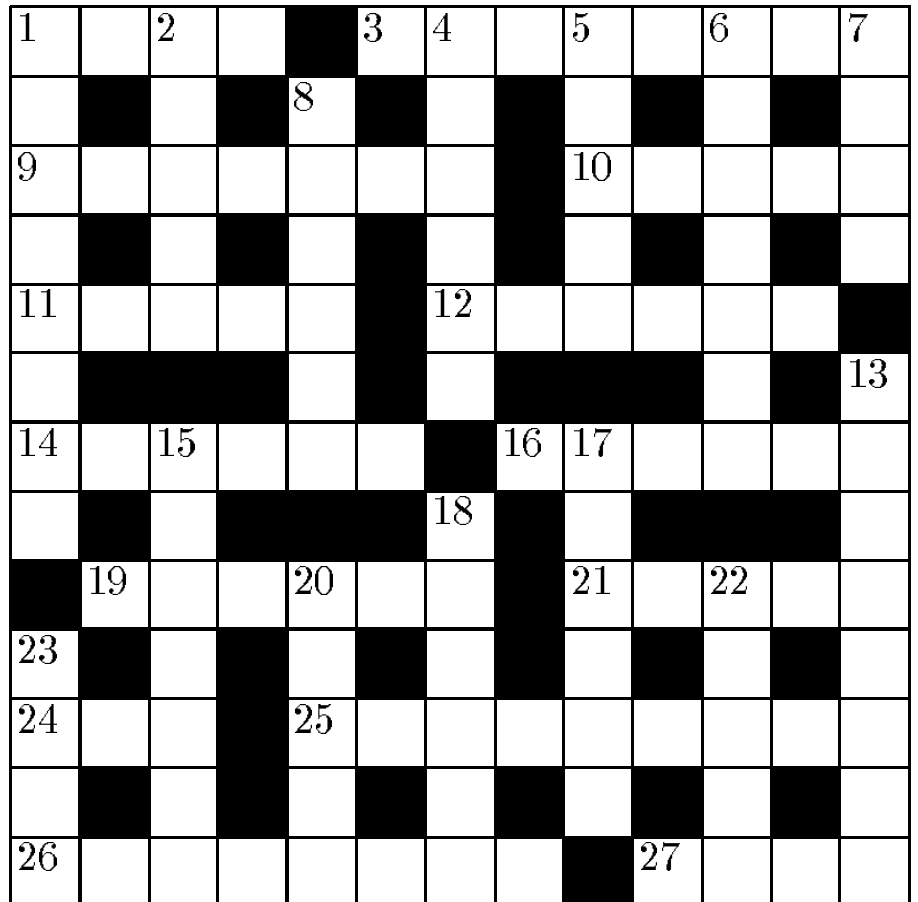
CRYPTIC GRID CLUES:

ACROSS

- 1. Sorry, greens returned without good ending (4)
- 3. Point of surprising horn duet (3,5)
- 9. Rim ain't salted, it ain't a margarita (7)
- 10. Singers eager to back head of studio (5)
- 11. Sorry, greens returned without good ending (4)
- 12. Spotted cat from Toledo coming back with key change (6)
- 14. Slight secret in foreign oregano (6)
- 16. Replacement of unit is not going anywhere (2,4)
- 19. Diverts golden mess (6)
- 21. Stick in the torpedo we lost (5)
- 24. Sit on the fence, or topiary (5)
- 25. Nay vote sends it for renegotiation (7)
- 26. Shared commendation arranged without date (2,6)
- 27. What philosophy 17D reveals (4)

DOWN

- 1. Lazy boy teases a rich ram (8)
- 2. Vessel, article or thanks (5)
- 4. Togetherness breaks in on us (6)
- 5. Push string in, Godiva (5)
- 6. Food hidden inside extra violin case (7)
- 7. Take cover off sled dog (4)
- 8. Dry wit ahead: her (6)
- 13. Notice I talk up, roll around (8)
- 15. Do manic sort get around much? (7)
- 17. Practice arising from dim sun (6)
- 18. Was previously employed (4,2)
- 20. Human origin premise that is not flexible (5)
- 22. Ark we make (5)
- 23. Announce link with Siamese (4)



CONVENTIONAL GRID CLUES:

ACROSS

- 1. Powerful planet
- 3. Will believe anything
- 9. Really really quiet
- 10. Paper arrays
- 11. Next year of the Chinese calendar
- 12. ___ of justice
- 14. Fishy sign
- 16. Christmas drink
- 19. Angora goat hair fabric

- 21. Village People adjective
- 24. Hungry Hungry ___ (singular)
- 25. Ice ice baby
- 26. Leo x Pisces?
- 27. Capricorn's animal

DOWN

- 1. Deform
- 2. King or Queen
- 4. Not comfortable
- 5. Between Virgo and Scorpio
- 6. 1 or 0

- 7. Mario's side of New York
- 8. Hay fever reaction
- 13. Unlettered, untutored, unlearned
- 15. Genital-ruling zodiac sign
- 17. Twin's sign
- 18. Desparately desires
- 20. Removed or distant
- 22. This one time at band camp or a violin so big you have to put it between your legs or Yo-Yo Ma's instrument.
- 23. Brad's housemate Dilts (short form of Philip)

