

math

NEWS

Volume 118, Issue 2

Friday, January 27th, 2012



Giant cat cat-sizes yacht near Purr-sia



lookAHEAD**mathNEWS**

January 27	Issue #2 goes on a cruise
February 6	Production Night #3 takes a joyride along the coast
February 10	Issue #3 hits the reef

MathSoc

Tuesdays	Games Night in the Comfy at 6:30 pm
Wednesdays	Special nights in the Comfy!
January 31	Program rep and VPF nominations close
February 2-3	Referendum

CECS

January 24-27	Employer interviews
January 30-31	Employer interviews
February 1	Job Fair at Bingemans 10-3:30
February 1-15	Employer Interviews
February 2	Choosing a Major: TC 1208 2:20-4
February 2	Work Search Strategies: TC 1208 10:30-12
February 7	Successfully Negotiating Job Offers: TC 1208 10:30-12
February 15	First employer interview cycle closes
February 16	Interview Skills: Preparing for Questions TC 1208 10:30-12

University

February 2-4	FASS
--------------	------

Feds

Jan. 31-Feb 13	Campaigning period for Feds election
February 1 & 7	Feds election debates in SLC
February 14-16	Feds election voting

Misc

February 2	Groundhog Day
February 5	World Nutella Day
February 9	Read in the Bathtub Day
February 12	Darwin Day
February 13	Desperation Day
February 14	Valentine's day
February 20	Family Day

Due to some unforeseen circumstances, *gridWORD* will not be appearing in this issue of *mathNEWS*

ISSN 0705—0410

mathNEWS is normally a fortnightly publication funded by and responsible to the undergraduate math students of the University of Waterloo, as represented by the Mathematics Society of the University of Waterloo, hereafter referred to as MathSoc. *mathNEWS* is editorially independent of MathSoc. Content is the responsibility of the *mathNEWS* editors; however, any opinions expressed herein are those of the authors and not necessarily those of MathSoc or *mathNEWS*. Current and back issues of *mathNEWS* are available electronically via the World Wide Web at <http://www.mathnews.uwaterloo.ca/>. Send your correspondence to: *mathNEWS*, MC3046, University of Waterloo, 200 University Ave. W., Waterloo, Ontario, Canada, N2L 3G1, or to userid mathnews@student.

math.uwaterloo.ca on the Internet.

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

The Voices of Sacha: Conscience (ConcealED), Reason (CowED), Idiocy (!ED), Intelligence Dampening Sphere (ScruffyED)

mastHEAD

Steering this publication in the wrong direction

As an editor of *mathNEWS* it is my job to make sure pages with words get published every second Friday. Sometimes the editors make mistakes...we aren't perfect. The editors who ran *mathNEWS* before us (specifically StaticED), have preached how they "saved *mathNEWS*". Well the current editors are here to ruin it. MUHAHAHAHAHA. BOW TO YOUR NEW OVERLORDS!!!!

You could say that we're sinking below the standards from the glory days, but I'd rather think that we're heading on a steading course towards a reef of sadness. Which brings us to

our *mastHEAD* question: How would you rock the boat?

Soviet Russia ("Nuke the fxxxing boat"), snippet("when the boat's a-rockin', don't come a-knockin', if you know what I mean..."), Impulse Vector ("I'd save the boat... and ride a sailor"), MeaninglessQuips ("Zombie Freddy Mercury"), (define this(not cool)) ("Alone, as I cry. You said bed right?"), El Jengibre ("On a dolphin, doin' flips n' shit"), theSMURF ("by docking with the rock"), the BEDMAster ("Giggity"), Element 118 ("with El Jengibre in a 'my bonnie lies over the ocean' contest"), Ender Dragon ("I'd become an iceberg and smash it."), cynic 2.0 ("Like a true canadian canoe."), moment ("A passenger wide game of Octopus"), IceNine ("Using Dr.E Fadd's Lat-est invention, FLUDD!"), Prez ("A president must be a stable rock."), Blueberry Muffin ("A couple finely timed explosives"), waldo@<3.LE-GASP.ca ("By watching My Little Pony: Friendship is Magic and while the bronies are distracted, Soviet Canadian...watch out!"), SovietCanadian ("What she said"), MustardMap("Throw a lance through a land dreadnought."), The Rock ("I'm on a boat!"), Zethar ("<Elec. Guitar, c=C5, 4/4, ♩ = 117: ... | (M32) Ve— e· f♯· g· f♯· e· | Vd— e— VB— | B^{1/2} · B· A· e♭^{1/2} · e♭ · e· | Vf♯— f♯· g· f♯· e· e♭· | ...>"), ConcealED("rocks"), ScruffyED ("On my ship we've got an ass anchor!"), !ED ("I'd fill it with pumice so it would still float")

CowED ("give ALL the people alcohol!")

P.S. If you can figure out the song that Zethar is referring to I'll let you hit !ED with a nerf axe

WIM: Women in Math Committee**What is WIM?**

The Women in Math Committee is an organization of female math faculty and graduate students that work together to provide support and resources for women in math at UW. The WIM committee encourages women to pursue mathematics and organizes speakers and events for female math students and faculty.

Do I have to be a woman in math to take part in WIM undergrad?

No, everyone is welcome to join, including women, men, math students and non-math students.

You're warmly welcomed to our WIM first event.

Time: 6:00 - 9:00 pm January 30th, 2012

Place: MC Comfy

Activities: games, poker, karaoke

Food: pizza, pop, cookies, cupcakes/donuts

Prez Sez 2: Electric Boogaloo

Hello again. Harrison Gross, MathSoc Prez here.

The MathSoc Budget meeting happened this week. Was likely rather boring, we've passed the relevant portions and now have allowed for clubs to spend money. Yaaaaaaay.

Still waiting on C&D news. The C&D board either has met or will be meeting ASAP to discuss the finances and operation of the C&D for all of you who were concerned after the Imprint article last term.

Capital Improvements Fund applications will be open soon if you or some club have an idea as to how we should spend like seventy-five thousand dollars on renovation ideas.

Anything you guys need please email me or come pay me a visit in MC 3039/3035 on MWF 9:30 AM-11:30 AM. I get lonely in that office even with Sean, Ty, Lauren, and Ifaz to hang out with. You can also find me on TTh in SLC 0137, in the Combined Clubs Library. I'll probably be around as well.

Harrison Gross
MathSoc President W2012
prez@mathsoc.uwaterloo.ca

FedS Sez

Elections are almost upon us! Nominations closed this past Monday and candidates are gearing up for the campaign period, which starts on Tuesday, January 31st. As a math student, you will be voting for FedS Math Councillors, Senators at Large, and FedS Executive. Look out for posters, debates, and campaign materials from all the candidates between next Tuesday and Monday, February 13th. Then, make sure you go online between Tuesday, February 14th and Thursday, February 16th to vote for your 2012-2013 student representatives! For a complete list of candidates, links to campaign websites, information about voting, and more check out vote.feds.ca.

If you have any questions, comments, or concerns about the elections, be sure to let us know!

Saleem Khan, Andre Magalhaes,
Jesse McGinnis, Alex Russell & Josh Shabtai
mathcouncillors@gmail.com

MathSoc Nominations and Elections

Hello Mathies,

We are currently looking for program representatives on council as well as a VPF for the current term and the Fall term. A full list of available positions can be found at <http://mathsoc.uwaterloo.ca/council/Vacancies>.

If you are interested, fill out a nomination form which you can find on the MathSoc website (mathsoc.uwaterloo.ca) or outside the MathSoc office. Nomination forms are due by Tuesday January 31st.

Finally, we also are holding a referendum this Thursday February 2nd and Friday February 3rd. More details to follow on this.

If you have any questions, feel free to email us at elections@mathsoc.uwaterloo.ca.

mathFOC Sez

Hello again awesome mathies,

MathFOC 2012 again, asking you, "Have you ever thought about being more awesome than you currently are? Have you ever wanted to meet new people, gain leadership skills, or just generally be a part of something phenomenal?"

Regardless of the response to the above question, you should apply to be an Orientation Leader for Math Orientation Week 2012! Applications opened on January 24th; they will only remain open for 6 more days, so don't wait; apply now! For information on the variety of different positions available, and a link to applications, check out our website, orientation.math.uwaterloo.ca! Also, like our Facebook page: facebook.com/MathOrientation2012. Our Twitter page is located at twitter.com/mathorientation, so send us a tweet or follow us!

TL;DR: Applications are currently open; please be reminded that they will close February 2nd.

We hope to see you soon!
Sacha, Anna, Michael, and Amanda
MathFOC 2012

DTA and AETS Nominations Open

Nominations are now open for these teaching awards: The Distinguished Teacher Awards (DTA) and Amit & Meena Chakma Awards for Exceptional Teaching by a Student (AETS). Nomination sheets for DTA can be picked up at both libraries (DC and DP), SLC's Turnkey desk and EV1 325. Drop boxes will also be available at these locations. Nominations for the AETS are submitted by email to cte-awar@uwaterloo.ca. You may also visit cte.uwaterloo.ca/teaching_awards_and_grants for more information. The deadline to submit DTA and AETS nominations is Friday, February 3rd, 2012 and Friday, February 10th, 2012 respectively.

FASS Sez

In celebration of our 50th year, FASS is performing an irreverent re-telling of its own history, mostly made up, that nevertheless catches the true spirit of the company. If you want to know what that is, come out and see this year's show. The message is delivered in classic FASS style with pirates, meta humour, and jokes about life at UW, life in general, and just about everything else!

FASS: The Neverending Story will be performed at the Humanities Theater in Hagey Hall at the University of Waterloo. Showtimes are Thursday Feb 2nd at 8:00pm, Friday Feb 3rd at 6:30pm and 10:30pm, and Saturday Feb 4th at 7:00pm. Tickets can be purchased over the phone at (519) 888 - 4908, on-line at <http://uwfass.ca/50th-reunion/store/>, or at the door.

In keeping with FASS tradition, the Friday Late show is designated for audience participation, and is not for the faint of heart!

Collen
Producer, FASS 2012

Sweet and Sour

SOUR

Just a friendly reminder to check your standing on QUEST (quest.uwaterloo.ca). Often your standing contains important information that can affect your education in the Math faculty. If you want more information, please see an academic advisor.

Not only will you see your standing, but you may see academic Blocks (Other terminology includes Holds or Service Indicators). Blocks prevent you from enrolling in courses and are placed on students who have failed too many courses (2.0 units or about 4 courses), or have used too many attempts (4.0 units or about 8 courses). An attempt is used when you fail, withdraw in the second drop period (i.e. a WD) or retake a passed course. An advisor will generally remove a block after a discussion with you to ensure that you are aware of the limits.

SWEET

Did you know you don't need to take 5 courses a term in all plans? Some plans will let you reduce your course load to 3. This means you can spend more time on the courses you are in, possibly increasing your average, reducing the chance of failure or Withdraws and enjoying the wonderful educational journey you are on. If you are uncertain whether this applies to you, please talk to an academic advisor.

Riley Metzger
Academic Advisor

Jobmine Plus

More people need to use Jobmine Plus

So it's Jobmine season. I get that. I walk around classrooms and cafeterias, and I see Jobmine on a lot of screens. However, most of these people are not using Jobmine Plus, a handy little browser extension that makes life so much easier.

Google Jobmine Plus. Install it. Use it. It will make Jobmining less painful.

You're welcome. Good luck!

A Cheesy Article (for CCCh)

It's a gouda idea to join the Campus Crusade for Cheese! You cheddar come to our meetings, in SLC 2105B on Fridays at 4:30.

It's gonna be a dairy good time.

It's a brie-ze to join; you're a member once you pay for your cheese.

It'll drive you crackers how cheap it is! Only \$2 for cheese. Come parmed and ready; bring a plate, or pay \$0.25 for a disposable one.

Then you'll edam up all the cheese you'd like!

If you have a cheese feta-ish, or you just want to join a really weird club, come to our meetings!

Don't be forever provolone; you'll meet lots of people!

You just ricotta come...or you'll make us bleu.

If you don't, we'll Swiss you.

You'll Havarti a good time! and we'll love you for chevre.

Make emmental the puns!

Is Life Without a Laptop Still Feasible?

When I was in first year, I went without a laptop. Why?

Laptops are heavy, expensive, or both. Their bright, ever-flashing screens potentially distract dozens of one's peers when used in lecture halls. You're always hunting for the next electrical outlet, so that you're not locked out of your own data by a dead battery. They depreciate in value really quickly.

They told me that it was possible to complete all my assignments without a laptop. We had labs on campus, after all. Granted, campus was really far from Ron Eydt Village for those long, cold, February nights but at least they were there. At least one lab was open, no matter what hour of day or night. If there was ever a night where I had trouble sleeping, I could procrastinate on Facebook for an hour or two before diving into nano (- I hadn't yet bothered to try out vim or emacs -), finishing off my assignment, and uploading my code to Marmoset.

This term, I realized something was different. The Piazza group for CS 136 contained this question:

Linux Labs

Just wondering where exactly the Linux labs are? <http://www.cs.uwaterloo.ca/cscf/teaching/labs> Lists the Linux labs as CS488 students only - any ideas?

And, in one of the follow-up responses:

So I can login in MC3006, but I'm not logging into a Ubuntu system. I have gedit, but not RunC. What am I screwing up here?

It occurs to me that there no longer appears to be a documented 24/7 X11/RDP lab for general use by CS students.

Not that there aren't options. There are certainly alternatives — one could use the RDP clients maintained by MFCF to access their Solaris and Windows machines, and then use SSH (and probably X-forwarding) to access the undergraduate CS environment. One could likewise use SSH/X-forwarding/Portable Xming on the Nexus machines maintained by other faculties, like Engineering or AHS. Or one could figure out how to get X-forwarding to work in one of the Mac labs — though that tends to be more hit-and-miss than I'd like.

One could also skip lectures to do the assignments during the few precious hours when the labs actually are open, Monday to Friday, 0800 to 2100. Gosh, my bank has better hours than that. It's open on Saturday, for example.

As for me; I've been borrowing my friend's old laptops for almost eight months now. I hate this feeling of being constantly chained to the edges of the room where laptop outlets exist. I miss all times I met and absorbed knowledge from upper-years at two in the morning. I feel less like a ninja and more like a zombie. I'm also constantly afraid that I'll submit an assignment that works just fine when run over SSH X-forwarding, and yet mysteriously breaks when run on ye olde thin client. Perhaps I'm being paranoid. I do wonder though, if I'd survive, if I was a first-year today.

!able

Results say yes: I have a tablet

Tales From Beyond

The Case of the Over-Glorified Pivot Table

When you graduate, life pretty much ends as you know it, and you are reborn as a mindless cog of the not-so-well-lubed corporate machine.

One day you will also (if you escape the ivory tower) chug away at the daily grind of the corporate world. I for one, work as an over-glorified pivot table. Do you know what Excel pivot tables are (fancy-pants summarizing and filtering tool for tables)? You should, because if you do you could do 90% of my job. But it's that other 10% that they pay me for – it's the arguing with IT to get access to data, arguing with the business to understand what the heck it means, arguing with management to understand how the heck they want this pivot table to look as an “end result.”

On that note, in a non-tech company IT is not as competent as you'd like it to be. I came from an IT background, and I learned this fact quickly when people described me as “competent.” “Not as common as you'd like around here,” they'd sometimes add.

On effort estimates

Our team is expected to give estimates on how long our projects will take, and they are called some very strange things. “Level 0 estimate”, “Level 1 estimate”, “Level n estimate”.

We asked the Director what a “Level 0 estimate” was. “As far as I'm concerned,” he said, “it's a wild-ass guess.” Alright, we can do that. Oh. Well, that explains a lot about some level 0 estimates I recently got from IT.

On scaring your coworkers

I fiddle when I'm bored in meetings – who doesn't? I fiddle in meetings I'm expected to run as well, which is fine as long as I realize what I'm fiddling with. But this time, by the time I looked down on to see what I was fiddling with, I realized that it was a dried cut on my arm and it was now bleeding profuse-

ly. I tried to balance the blood drops on my arm as I stood up in mid-sentence and attempted to awkwardly excuse myself, but they asked, and I was tempted to show them the arm.

On getting to know your team

But I know the Manager is finally starting to get to know me because she says “Good job” if I can walk away from a meeting with IT without screaming at them for some reason or another (it cannot possibly take you two weeks to give a user permissions to access a file, it's a damn check box!).

Once we were on a phone meeting, and after a particularly spectacular set of “questions” (So you think you can...?), I get an internal chat warning, “Be nice...!” I respond with a Happy Bunny link, “I'll try being nicer when they try being smarter.”

On faulty keyboards

The Manager noticed that I bash the Enter key on my keyboard really loud, especially when finishing a line of code or a paragraph of an email. What can I say, you must exert dominance over the machines.

On understanding upper management

The Director is in a phone meeting with a coworker, and I know they're talking about me on the phone. A message on internal chat pops up from the Director, and I am immediately nervous.

> *You have one really big problem.*

This isn't going in a good direction. I wait. I sweat.

> *Can I help you with anything?*

> *Oh yes. Big problem. You sneeze like a trucker!*

Phew. Quick, think of something witty to say.

> *Of course. Otherwise I'd just be too awesome!*

> *Alright then, good day.*

I don't think I'm helping my case here.

Cynic2.0

Canadian Undergraduate Technology Conference

In 2011, with over 500 delegates from 20+ schools nationwide, CUTC was the biggest and best undergraduate technology conference in Canada!

What is CUTC 2012?

It's two days of incredible keynote speakers and deep, meaningful learning that we're known for. These 13 years of the Canadian Undergraduate Technology Conference has helped our delegates connect to notable industries and allow our sponsors to connect with delegates in a way that no other conference/classroom has been able to match.

What is our objective?

Along with the nation wide spread of innovation and knowledge, CUTC 2012 is going to be the first truly national undergraduate technology conference!

For the first time in history, CUTC is coming to you!

The conference will be situated in the heart of Toronto at Ryerson University, and will reach students across Ontario for one day of amazing speakers and competitions.

This year we are featuring hard-hitting speakers such as Allen Lau, Co-Founder & CEO of Wattpad along with Winston

Wok, Co-Founder of Simply Good Technologies.

Not only will the speakers blow your mind, but the competitions will test your skills in the tech world, allowing you to use your entrepreneurial drive in competitions featuring Deloitte and theNext36! Meet and network with other passionate techys and who knows, maybe you will stumble on the next big idea!

It's Time to Upgrade. Are you Game?

Speakers:

Allan Lau (Wattpad)

Winston Mok (Simply Good Technologies)

Deloitte Industry Professional

Competitions:

TheNext36 Entrepreneurship Competition

Deloitte Case Challenge

Visit tour.cutc.ca to register and learn more!

Your friendly neighbourhood CUTC rep

Rainbow Mathies 18

School Policies and You

Hello mathies! Before I begin my article for this week, I have a brief announcement. I will likely not be writing a Rainbow Mathies for the next issue. The FedS election will end up keeping me very busy, so this column will need to take a brief break. By the way, the FedS elections are coming up! Campaign period starts on Tuesday, in only a short few days, so do yourself a favor and keep yourself informed! The vote happens the week before reading week, and I'll make sure *mathNEWS* reminds you. Onto the article!

As a UWaterloo student, there are a number of different organizations and entities you are going to find yourself involving with. At minimum, sometime during your undergrad you are going to have to associate in some way with MathSoc, the Faculty, FedS, and the University. As a queer math student, you may appreciate knowing that there are some protections available to you should you run into any issues while interacting with these services. Hopefully you will never need to use this information, but it's still good to acknowledge the positive steps our school, and its subgroups, are taking.

- **MathSoc:** In my personal experience, MathSoc has been a very positive and accepting space to volunteer and to socialize. It therefore surprises me that, when researching for this article, I found no evidence of any anti-discrimination policy, or any explicit acknowledgement that MathSoc represents Math students' concerns on such issues. (The author would like to acknowledge that MathSoc policies are general enough to encompass queer issues as one of the ways they represent Math students, but all specifics refer to academic representations, or providing social events). However, MathSoc is obligated to fulfill Policy 33 (see below). I believe that this is a bit scary: in the unlikely case that something queer-negative happens within the society, the Executive and Council are not obligated to concern themselves. Currently, I'm in no way worried that this will be relevant, but it's a worrying hypothetical.
- **FedS:** FedS has a collection of statements of beliefs, called their Policies, which FedS hold as guiding principles to how they make decisions and conduct business. There are a number of policies that reinforce providing queer student with a positive university experience. Policy 6 obligates the university to provide Counselling Services, a service which has been a great help to many queer-identified students here. Policy 21 guarantees the freedom of expression for all students, given reasonable limits established by human rights codes. Finally, Policy 23 expresses FedS support of positive space programs at UW, given their desire to create inclusivity, diversity, and equality. Beyond this, FedS provides GLOW, a service mandated to support queer students and one of the few places with an established positive space policy (along with The Women's Centre).
- **Math Faculty/University of Waterloo:** I am lumping these two together because the Faculty doesn't seem to have any independent governing documents, but instead operates as an entity under the University. The primary University policy related to this area is Policy 33 – Ethical Behaviour. This policy protects university patrons from undue harassment and discrimination “as required by the Ontario

Humans Rights Code...” In my reading of the document, there seems to be no extension to these rights outside of the bare minimum governmentally regulated. To help fulfill this policy, the university has established a couple of offices and groups. I was able to identify two relevant ones. The first of which is the Conflict Management and Humans Rights Office, which replaced the Ombudsperson and provides support services as well as acting as a mediator for inter-university issues. This is where one might go if they experienced discrimination by a professor, for example. The second is the LGBTTTQQ Advisory Committee, which was recently mandated to advise a number of University constituency on queer matters of interest. You can search up the members of this committee and message any of them to be able to have any of your views discussed.

If you are queer-identified, and are looking for someone to talk to or for supportive allies, there are always resources available to you. You can learn more about GLOW and its offerings, including a phone line at www.knowyourglow.ca. Counseling Services is always available to you; their offices are open 8:30-8MTTh and 8:30-4:30WF, located in Needles Hall across from Student Awards and Financial Aid. If you need support and assistance immediately, you can call the Waterloo Crisis Center at 519-745-1166. If you'd feel more comfortable speaking with someone from a queer specific service, please contact the GLBT Youthline at 1-800-268-9688. Finally, if you have any comments and concerns about this column, including ideas on topics you'd would like to see, you can contact me at dtaleman@uwaterloo.ca.

Join me in a month when actually get around to that article on relationship issues I promised last issue.

(define this (not cool))



Better Bash

Background Tasks

These days most people have the ability to use as many virtual terminals as they like. However, if you move away from a desktop environment and onto something like an embedded system, you might not have that luxury. For example, at my last co-op job I worked with linux systems with only one available tty. However, since I was able to use bash I had the option to run multiple commands at once, placing some of them in the background.

Bash controls groups of processes known as jobs, defined as any set of commands in a pipeline. I'll be covering pipes and I/O redirection next issue. A job in the background doesn't receive keyboard input, but can still print output to your terminal. There are two basic ways to get a command running in the background. The first is to start it off in the background. To do this, append a "&" sign to the end of your command. You'll get a line of output looking something like

```
[1] 9771
```

The number in brackets is the job number, and the second is the PID (process ID) of the last process in the pipeline. I'll explain what a pipeline is in a later article. To get your process back into the foreground, you can type `fg n`, where `n` is the job number of the job you want. Alternately, just typing `fg` will bring the most recently stopped or backgrounded job to the foreground.

The second way of getting a job into the background is designed to get a job in the foreground into the background. First, stop the job in the foreground by pressing `Ctrl+Z`. You'll get a line of output looking something like

```
[1]+ Stopped <command>
```

Again, the number in brackets is the job number. To get the job running in the background, type `bg n`, where `n` is the job number of the job you want. Alternately, you can just type `bg` and bash will put the most recently stopped command in the background.

Ok, so now you've got a bunch of stopped jobs, and some jobs running in the background. How do you keep track of all these? Just type `jobs` and bash will list out all the jobs it knows about, as well as their job number and current status. Looking at this list, you will see at least one job number with a '+' beside it. This is what bash considers to be the most recent job, the one that would be brought to the foreground if you just typed `fg`.

Another thing you can do is kill off the jobs in the background. Type

```
kill %n
```

where `n` is the job number you want, and bash will end the processes associated with that job.

That's all for this issue. Read next issue as well, and with any luck, there will be an article on I/O redirection.

ConcealED

zsync

Client-Side rsync Over HTTP

I wonder when 4 GB+ virtual machine images became the norm in CS classes at this institution, but it's clear that the network infrastructure outside of campus is clearly not ready to handle dozens of students downloading such large files all at once.

`zsync` is a tool that uses the `rsync` algorithm to download a file from a server, but with pre-computed metadata to help the algorithm scale well (and run over regular web servers). This allows users to resume incomplete downloads and verify your file is complete in one step. Packages may be available for your Linux distribution of choice. As of the time of writing, it's available on *homebrew* (Mac) and *Cygwin* (Windows) as well. Sources can also be downloaded from <http://zsync.moria.org.uk/downloads>.

I first ran into `zsync` when I was downloading a Ubuntu release, and I've started using it over `jigdo`.

For TAs and support staff, making content available by `zsync` is straightforward. Simply run:

```
zsyncmake -C -e -u <url> <file>
```

For example, for the CS 136 VM, one could run:

```
zsyncmake -C -e -u http://www.student.cs.uwaterloo.ca/~cs136/VirtualMachine/CS136.ova ~cs136/public_html/VirtualMachine/CS136.ova
```

This creates a `<file>.zsync` file containing metadata and checksums which the `zsync` client can use. Simply make this file available in `public_html` (perhaps in the same folder as the Open Virtualization Archive (OVA) itself).

For students, once `zsync` is installed, downloading a file is as simple as

```
zsync <url>
```

Where `<url>` is the URL of the `.zsync` metadata file. The `man` page contains details on other flags, which may be useful if you are resuming an incomplete download or trying to sync from a file with a different name and similar contents (e.g. a previous version of a virtual machine).

!able

A Very Troll Problem

While playing around with geometry software, I found a few properties of triangles that I couldn't explain. Here they are, in increasing order of difficulty:

1. An acute triangle is divided into six smaller triangles by its altitudes. Prove that the intersections of the altitudes of each of these six smaller triangles lie on an ellipse.

2. A triangle is divided into six smaller triangles by its medians. Prove that the intersections of the medians of each of these six smaller triangles lie on an ellipse.

3. A triangle is divided into six smaller triangles by its angle bisectors. Prove that the intersections of the angle bisectors of each of these six smaller triangles lie on an ellipse.

Ender Dragon

The Life of a Gamer

RE: The Life of a Girl Gamer

So I like to game. This results in some interesting situations. I spent some time during winter break playing Call of Battle: Modern Field 3 on Xbox Live. I enjoy getting on the microphone to discussing tactics, talk about how sweet that 720 no scope head shot was, and generally have a good time chatting with my fellow gamers. However, there is always at least one person in the game who is, simply put, rude. For no reason at all, he / she will insult me, saying rude things such as "Go shave your back", "I know where you live", and "Your mom is waiting for me". Sometimes they are even worse, saying things so bad that I can not possibly put them in *mathNEWS*! I'm not sure what provokes people to be so rude, but it hurts me to see such a great online community ruined simply because people can not be nice to each other. Thankfully, the newly implemented Xbox Live Server Admin system allows such people to be kicked from the servers, keeping their insults away from our great community.

Sometimes, during the holidays, I would buy gifts for my Steam friends, to celebrate the holiday spirit. They are gifts, so I don't expect anything in return. That was never the intention. However, a "thank you" or some other expression of appreciation would certainly make me feel more appreciated. When they are silent, I sometimes wonder... Maybe they didn't like the game? Maybe it's me?

After playing for a while with some online friends and buying them a couple of gifts, I feel like we really have a connection. Wanting to know them better, I would sometimes ask for a picture, to put a face to a voice, so to speak. However, with one particular gamer, something bad happened. When I did this, she just said "You're ugly, get out of my life and good luck with your endeavors", and removed me from her friend list. How? How did she know that I am ugly?! I mean, it's true, but you don't have to rub salt on the wound... I was born like this, and I can't help it. I just try my best. Isn't that enough?

I'm not holding any grudges, but it did hurt. What did I do wrong to provoke such a reaction? What did I do that justifies personal attacks on me, from a stranger who I thought was my friend? Whatever I did, I'm sorry. Please tell me what I did wrong so I can fix it.

Let us be serious for a brief moment here. Someone's rude to you? Mute them. Report them. Hell, stop playing your game. Someone give you a free game? Say "thank you", and be grateful. Don't believe for a second that having a vagina gives you any more right to be an asshole than having a penis.

No innuendo intended in that last sentence. Seriously.
theSMURF

What to Write?!?

I didn't know what to write...not that I know what to write ever...

But since I'm taking a break from untangling a ball of yarn, I will talk about untangling yarn.

I really hate it when you untangle a huge length of yarn but then it gets tangled again as you keep working.

That is all I really have to say.

ConfusedIndividual

Dark Shades of the Truth

Dear Citizens,

Today we face possibly one of the greatest threats to liberty, freedom, and democracy ever to attack the United States of America. We are under attack not by bombs, gases, or armies, but by information and ideals which threaten the very foundation that our proud country was built upon.

On January 18th, 2012, websites we have grown to know and care about abused the trust they have earned after years of standing by our side. They used their services to engage in a political attack upon the government duly elected by the people. They have seized possibly one of the greatest inventions in our era, and potentially one of the greatest tools of democracy, and turned it into their propaganda machine. By building up the majority market share, they have monopolized information and use that power to silence and destroy the truth. We are publishing this message to our citizens in every publication we can because their control of the internet has given us no other means. They have aligned themselves with law-breakers and pirates founded in other countries who have no notion of morality or justice, and allow them to attack our borders through means so insidious we can barely detect them. They hope to destroy our economy, cripple us, and in so doing destroy our beliefs through subversion. We may now stand alone, the one true free port left, but we will not stand idly.

We have ordered the immediate seizure of once great companies that fell to corporate corruption. At this moment, forces of liberation have penetrated the offices of Wikipedia, Facebook, and Google to take them out of the hands of terrorists and place them under government control, thus returning them to the people: the true owners of the internet. We have also identified multiple websites hosted on our own soil setup and used by these insurgents to coordinate attacks and campaigns of misinformation. These include Tumblr, Twitter, and the notorious Reddit; a website previously used by child-pornographers to share pictures stolen from innocent teenagers. These atrocious organizations can not be allowed to stand and operate like this, they can not be allowed to destroy our freedom and manipulate us from within. We understand in the past that these websites have been used as forces of good, as places of collaboration and creating new ideas, and we thus dread our decision to take these actions knowing the consequences they may have on the free and open Internet. That being said, especially in times as dangerous as now, we must remember that principle is always more important than practicality. We can not ignore what is right, and take the path of what is easy. We must rise up, and fight back against the corruption which now sours the places we once loved.

We, the government, arm of the people, will never surrender. We ask that you stand with us in this time of need, and oppose the growing darkness.

brwarner

Do you have something that you want to submit? Come out to a production night or email us at mathnews@gmail.com!

Jobmine Sniping 2.0

I'm back on Jobmine, sniping your interview slots

For those who didn't see my article from about a year ago, Jobmine Sniping is an extreme sport where you obsessively check Jobmine to schedule interviews in advantageous time slots so you don't miss class. (Or so you do miss class.)

I decided to step up Jobmine Sniping this term, by using a script that would check Jobmine for me (at reasonable intervals, of course) and then send me a text message (via an email-to-SMS gateway). Unfortunately, I forgot that all my classes are in the basement of MC.

For my next iteration, I decided to simply have the script send an email to myself. Cell reception in the dungeon — I mean basement — of MC may be poor, but wifi is still present. This should have worked in theory, but then I discovered my script was eating up 100% CPU usage when it was supposed to be sleeping in between polls. So I had to kill it.

At this point, I decided to revert to manually checking Jobmine. It's worked decently so far. Unfortunately, Jobmine Sniping is pointless if an employer chooses a slot for you or decides to reschedule you. It's also hilarious when you're trying to snipe a time slot but the employer is still figuring out who to interview, so the schedules keep disappearing and reappearing and changing.

I was going to interview my friend again about Jobmine Sniping, but he couldn't be reached. I expect that he'd say something like "I bob, you are a horrible, horrible person. The only people worse than you are the writers for How I Met Your Mother."

I also got an unsolicited comment: "STOP SNIPING MY INTERVIEW TIMES !BOB!!!"

Happy sniping,
!bob

University Appoints Goose as Vice-President of Academics & Provost

Students fail to notice

A goose whose family has been residing within the school grounds has been appointed as VP Academics & Provost. Gosling Bartholomew Levant, whose family has remained here for at least seven generations (ignoring a small vacation in New York), seemed extremely pleased, but replied with a hiss when his secretary ruffled his feathers with an insult towards his height.

Asking students if they had noticed, we could not even garner a response, except for a couple of people saying "What on earth is a provost?" There was one student who noticed, but he was locked away in an insane asylum after dancing to a FASS song one time too much.

When asked why young Bart had been appointed, Waterloo President Feridun Hamdullapur responded saying, "It seems the geese know a lot about where and when students have class, and can thus attack accordingly. Having a provost who is so well informed about student locations can force more grad students to stay in their offices and actually get some work done."

Ice Nine

SOPA Proposed, Withdrawn

In the past couple weeks, there has been much stir about the proposed SOPA — or Surjective Odd Polynomial Act — which could have been passed as law last week in the United States of America, and had the potential to change the face of mathematics as we know it. The bill, proposed by Kentucky Republican Otto O'Morphism, would force all polynomials of odd degree to be surjective.

"There is no reason not to pass this act," claimed O'Morphism. "Every day we continue without strong requirements on polynomials, billions of dollars of mathematical research is wasted. The bill will have no impact on honest mathematicians, and will greatly reduce losses due to illegitimate mathematicians, such as ultra finite-ists and constructivists."

There are those, however, that claim the bill is draconian and will stifle modern mathematics. Vince Ector, a spokesperson from the Elementary Functional Foundation (or EFF) said that the bill could be disastrous for mathematics if passed. "The bill is ill thought out and directly against the interests of the common mathematician," he said. "And worse, it's simply wrong. There are odd polynomials over finite fields which are constant. Does Mr. O'Morphism expect us to throw out years of research in finite field theory and claim that these are not actually polynomials? It's absurd."

After outcry by the mathematics community, in both the USA and globally, the bill was withdrawn.

image



40 Reasons to Love Combinatorics

"I was told I need 20 or more profQUOTES to get tenure but if have over 60, then I'm fired." – Katz, Math 239

I give to you all: KatzQUOTES!

1. "Let's say you flip a coin, what are your options? Queen Elizabeth II and... a moose? A caribou!"
2. "We're in Canada, it's impossible to stream anything here!"
3. "We're going to write this and then we're going to stare at it to make sure we believe it."
4. "Now we need to change 'the Franco-Prussian War' to '+ x'... Now we need it to be '-2x'."
5. "There will be more commercials in this class."
6. "I promised to let you out early a week ago, looks like I still can't do that."
7. *[makes a mistake on the board]* "Ugh, some professors."
8. "Actually I get a 3rd demerit for not noticing the 2nd one."
9. "Is everyone happy with that? It is a formula..."
10. "That's actually a fun example, so we can't do it in class."
11. "Wow, I digressed and it wasn't about cartoons or Texas."
12. "I'll give you a sec to write all this down and see why you should care."
13. "For example: Moriarty, Sherlock Holmes' nemesis, published a very well-received article on the Binomial Theorem."
14. "It's unclear what this means in power series land."
15. "Change the 'x' to 'Franco-Prussian War' so we get ... sad puppy."
16. "For the 5th power of the Franco-Prussian War we get... a number!"
17. "If you don't believe it now, spend 5 minutes after class and you will."
18. "Does anyone know how to simplify this? Me neither... you need to use fancy stuff."
19. "I'm a hardcore man, doing coffee today."
20. see subheading
21. "Nobody actually know anything about football so it's really easy to fake."
22. "This is what happens when you aren't raised by combinatorialists... or combitorists?"
23. "do'h ... +1 to the Dated Catchphrase Counter"
24. "You may be asking: Where's the beef?"
25. "[The party] was really weird and awkward... because it was all mathematicians."
26. "It was like an explosion of awkwardness."
27. *[lame joke]* "If that joke doesn't get a *profQUOTE* then I don't know what will."
28. "You guys make a certain noise when I make a mistake."
29. "In the words of my optometrist: I'm going to make things blurry"
30. "Have a good weekend! Go frolic outside!"
31. "Yes, 'cuz I'm fat!"
32. "I have a friend who still says things that he likes are 'legit'."
33. "That changes my theory that geek culture never changes."
34. "Oh my god, I've heard a lot of G. Love."
35. "I went really far to explain a joke I wasn't going to tell."
36. "This is an example of how sludgy things can get."
37. "The sad thing is that the paper took 2 hours to research and 40 hours to write. Let that be a lesson; If you're going to write something, write it well or people will be unhappy."
38. "Is this groovy?"
39. "Notice how I get louder when I write bigger?"
40. "Oh god, I've been quoted!?"

We hope that you enjoy your tenure,

Madness Within the Mathie

It was a cold night, though not as cold as it used to be. The thought of shivering went through his conscious mind, but his body didn't react. He missed the cold. Long gone were the days of foolish bravado, walking through the cold in naught but a t-shirt and shorts.

He was walking to the apartment of a girl he had a crush on. They had agreed to see each other, though not for a romantic entanglement. Instead, just for a carnal engagement. He went out of desperation, not due to want, but due to need.

About halfway to the apartment, he stopped and sat down on the sidewalk, becoming lost in his thoughts. Shame, revulsion with himself for such actions covered the majority of them. Looking down the next road, the bus stop stood out in stark contrast with the mild dark night. The metal beast eventually arrived and carried him to a watering hole, the local pub.

Three or four drinks later, he began telling his story to a local businessman who lent him a sympathetic ear. The mathie's phone was switched off to avoid contact from the one who wished to ride him hard, fuck him without recourse.

The man was a human resources officer for a large multinational firm with offices in the area. He supposedly had heard it all, strange stories of office romances that put a little freaky sex in sharp relief. The mathie said, "If that's the case, then why am I so insane in the membrane? Why am I unable to accept

this?"

"You're a young man who developed with certain ideals embedded in him, who wishes to explore boundaries but is terrified. You have been told forever to look for stability, avoid risky business, find a nice young woman to settle down with and have a family. In other words, stop dreaming you young fool."

The man continued, "I reject this. I grew up with a lack of perspective, and had no idea what I wanted in my life. I took psychology as my undergraduate degree, and eventually learned how much I love understanding and evaluating people. I found my passion and jumped after it. The fear that you won't find it through such carnal adventures is rather normal for someone with your upbringing. You consider yourself mad, but in a mad world rife with contradiction, you remain normal, just as you were taught to be."

"The normal is safe, it is good. Diversity is bad, being strange, weird is rejected by these supposedly normal people."

The two men talked back and forth for a time after the elder stopped lecturing. The mathie eventually did get up and head over to her apartment.

An hour and a half later, she asked what it was that drove him to be so good. He gave a one word answer.

"Passion."

Software Engineers Attend Conference, Come Back Alive

Last week, nearly two dozen students represented Waterloo at the Canadian Undergraduate Software Engineering Conference (CUSEC) in Montreal, Quebec. In between shivering through the Montreal Winter, discovering the RESO (underground city), and trying to help egg-cat with their homework assignments, we absorbed knowledge from the following speakers:

Alexis Ohanian, founder of Reddit, spoke about progress made against SOPA/PIPA; how it is the World's Internet, not America's Internet; how the fight isn't nearly over yet.

Jeremy Ashkenas, creator of CoffeeScript, argued the case for code as an art form, rather than just a process to be engineered.

Greg Kroah-Hartman, Linux kernel developer, talked about how big the kernel is, how much it changes every day, and how to get involved contributing patches as a kernel newbie.

Bret Victor, known for designing experimental UI concepts at Apple, discussed how current code-compile-debug cycles require the programmer to execute code in one's head, and that the latency of interaction for developers makes it difficult to discover novel things about code. He also demoed a real-time JavaScript IDE concept that updated a canvas in real time, allowed variables' values to be tweaked by dragging sliders (similar to [0]), and displayed the trajectory of a player across time (similar to [1]). He then spoke about having a guiding principle, gave examples of historical figures with guiding principles, and then discussed the pros and cons of living by your own guiding principle — to a standing ovation.

Manveer Heir, Senior Designer at BioWare, warned everyone sternly to stay as far away from the game industry as possible — before telling those who remained how to get in, and what it's like in the industry.

In between speakers, we ran around handing out resumes and making pleasant conversation, rode up and down the hotel elevators, and talked in our sleep. We played chess amongst ourselves at games night, taught the first-years how to tip at a pub, and made it back to Waterloo.

Now for a week of catching up on assignments and studying for quizzes.

Maybe we'll actually get a chance to pay back some of our sleep debt. Next week.

Copyedits

As many of our more astute readers noticed in last issue, there were many errors in typesetting, grammar, formatting and whitespace. As someone who lives with CowED and helps ensure that the copyedit is error free, it infuriates me that between my sanguine pen and the press, errors highlighted under draconian scrutiny go unnoticed and new ones crop up like weeds in an untended lawn. A quick analysis of the issue shows that statistically speaking, the number of errors reduced by my copyediting in the final copy is a Gaussian distribution with mean -0.56 and standard deviation 2.18. If the editors cannot take the time to ensure that even the errors pointed out are corrected, why must effort be expended to catch errors in the copyedit?

I still want a copyedit,
Zethar

Disgustingly Delicious

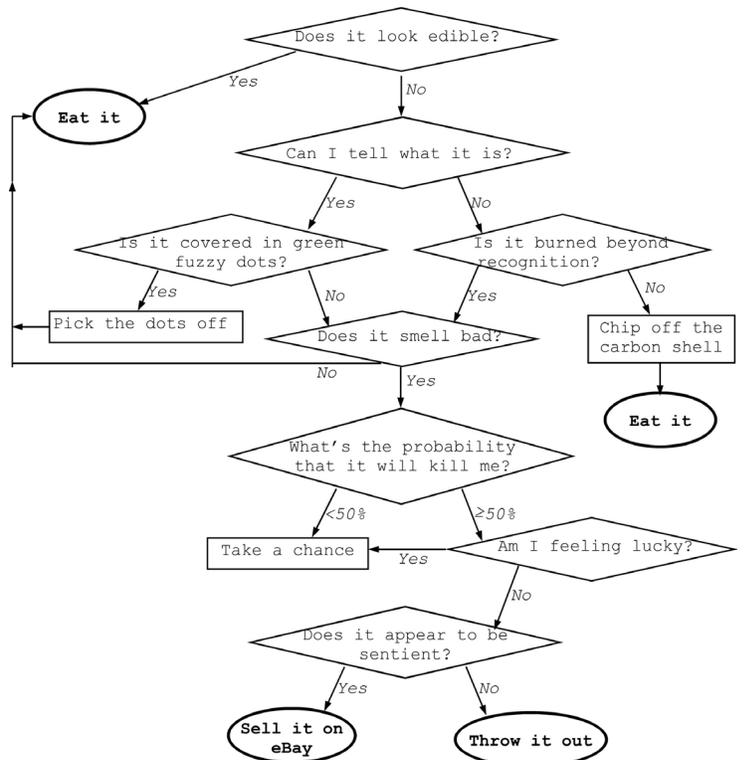
Sweet and Creamy (and Sticky) Poutine

Hello Mathies,

With too much food and not enough imagination, I am here to tell you to throw everything you have in your kitchen into one mellifluous meal. So take your favourite fries, and add the richest gravy, cheese curds, sautéed mushrooms, caramelized onions, honey mustard, custard, chocolate sauce, and condensed milk you can find and throw them into a bowl. Mix well and top with whipped cream for a sundae-style poutine that will melt your heart and will power.

Still healthier than a double-down.
Soviet Canadian

Do I Eat This?



Blueberry Muffin

Faith in Humanity Restored

Today, being production night, I drove to campus and parked in lot N (the lot north of B.C. Matthews Hall). I went to pay for my parking ticket and to my awesome surprise someone had placed their old ticket in the credit card slot! So I'd just like to offer you an award of one free hug from myself since you helped me save \$5. I know you may not read this but I felt like sharing my awesome experience with *mathNEWS* readers. So remember folks, if you're leaving the parking lot and will no longer need your parking ticket, why not leave it to make someone's day way better?

One happy editor!
CowED

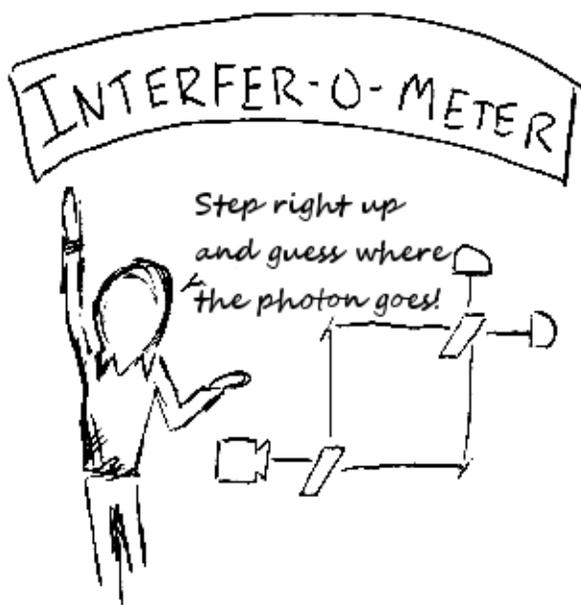
Extended Metaphor

I'd like to show you my metaphor. It's not a metaphor to be underestimated. It's not an immature one of the sort often confused with similes, or one of those tired ones thought up by desperate writers in the middle of the night, nor is it a worn-out cliché, too overused to do its work.

Rather, it is a bold, new, fresh, extended metaphor, carrying on for clause after clause, sentence after sentence, yet never seen before, its evocative potential untainted. Its referent is so far from its source, its sheer enormity breathtaking. I can barely contain it, nor do I wish to do so. Society tells me that my metaphor is shameful, that I should not flaunt it so publicly. Yet I feel no shame; why should I hide the rich natural bounty of my mind? After all, my extended metaphor gives me such pleasure.

I enjoy nothing more than studying it, manipulating it delicately, noting its wonderful sensitivity to stimulation. On these occasions, I marvel at how the reach of my metaphor grows, how it extends yet further, and at the same time grows more solid and clearly defined. My metaphor is blessed with both intellectual rigour and vigour. I eagerly seize the chance to stick my metaphor into other sentences.

I prefer agile, clever, and well-formed sentences, especially those with a hint of poetry; I also enjoy compact, tight little sentences, particularly those unsullied by other metaphors. Though I have never done so, I might enjoy the chance to mix metaphors some day. In spite of the merits of my metaphor, I now find myself caught up by a writerly sense of narrative structure: just as every story must, this article is now coming to a climax.



*The Quantum Carny:
Shuckin rubes for over 100 years*

N Things That Make You Turn Into a Cat

Waldo is wondering how to feel about this

- A big pluffy and fluffy hand muff
- Yarn and/or string
- Belly rubs and pokes
- Poptarts
- Catnip
- Catwoman
- Schnuggling
- When you see pictures of actual kitties being cute or funny
- Your friends using any of the above to provoke you in an adorable/annoyed manner

waldo@<3.LE-GASP.ca

The Ambiguous Videogame Quiz

Thank you everyone for the submissions for last issue's quiz! After much discussion we have decided a winner! Scythe Marshall has won last issue's quiz, with a close following of Brook Jensen. They both gave really good answers, that easily beat the others out of the water. The best answers for each questions were:

1. A sword and shield will help you in your journey: *Amnesia, but fuck you cause you'll never get them (gl;hf with monitors)* – Brook Jensen
2. Escorting a "female dog": *Ico. Why hello there, Yorda.* – Scythe Marshall
3. Girls fight each other for victory: *Dead or Alive Xtreme Beach Volleyball. Need I say more?* – Scythe Marshall

Honorable mentions goes to Soviet Canadian for question 1, where he answered Halo 2. Also like to mention someone who answered everything with basically their sex life. They were immediately disqualified for having no videogame based answers. Unless videogames are their love life, which I then say good luck with your endeavors and sorry for disqualifying you!

This weeks quiz:

1. Thank God for the skip button.
2. Social interactions are beneficial.
3. Moo. Yay!

At any rate, since I forgot last issue, please submit your answers in the *mathNEWS BLACK BOX* before Feb 6th, 6:30pm. We hinted that creative answers would get high regard before, and Amnesia is a good example of this. Remember to think outside the box! But also make sure to answer the questions correctly. At any rate, good luck and have fun!

Use this as my signature

What I Actually Learned at UW

Every now and then I like to pause and reflect on what I've learned through my time here at UW. And I don't mean those things that I memorized for the exam and forgot a week later. I'm talking about what I'm actually going to remember for the rest of my life. So here, in condensed form, is what I learned from my courses here at UW!

MATH 135

It's not a real proof unless you spent 20 minutes staring at a blank paper first.

MATH 136

Row, row, row reduce, quickly down the page. One mistake and you'll be baked, so check at every stage!

MATH 137

Good prof's class: "Wow, this stuff is so easy! I'm getting bored."

Bad prof's class: "Didn't I understand this in high school?!?"
Always take the Good Prof's class.

MATH 138

From this point onwards, integration and series will show up in everything you do in the Math faculty. Say your prayers.

STATS 230

Bell curves are a beautiful, beautiful thing. Especially when applied to class averages.

CS 135

RECURSE EVERYWHERE!!!1111

CS 136

It is possible to get the following error:

Fatal Error: the impossible happened

At which point the computer starts printing Chinese.

CS 245

$P = NP$, aka it's impossible to program anything. Give up now.

CS 246

When they say, "Start early," they mean, "You're screwed."

PD 1

Just because they're teaching a course doesn't mean they know what they're talking about. (If you don't believe me, take a look at their resume guidelines.)

PD 2

You can write reports about writing reports. An infinite loop ensues.

Final Notes: I should mention that despite the somewhat negative descriptions, on the whole I've enjoyed my courses and had a lot of fun here at Waterloo. 3 more years to go

profQUOTES

Canadian shoppers are too cautious to shop. That's why they have those benches in shopping malls!

-Smith, ECON 102

[About the 2008 recession] It is so cool, that for the first time in humanity, we are all hurting together!

-Smith, ECON 102

You should just keep in mind that I never appear in daylight.

-Smith, ECON 102

I'm an equal opportunity insulter.

-Smith, ECON 102

Even an artsie can understand that doubling money is a good thing.

-Smith, ECON 102

Fine, fine, be poor if you want to. Just don't bitch at me if you are.

-Smith, ECON 102

The earthquake gods must really hate Japan. It's like kicking a puppy!

-Smith, ECON 102

Economics is in the faculty of arts. Even if it's useful, it belongs in the faculty of arts.

-Smith, ECON 102

Give me time, I'll make jokes about the engineers and mathies too. I save them up as a kind of comic climax, because it's the only kind of climax they're ever going to have anyway.

-Smith, ECON 102

And that's the coordinates of the image of the vectors in B with respect to C. It's almost as much fun to say as it is to do!

-Wolczuk, MATH 235

Alright! You will likely never, ever, ever, ever see an example that easy ever again.

-Wolczuk, MATH 235

So, I'll do it the easy way... Look at the notes! Muahaha.

-Wolczuk, MATH 235

This is – and I'll use the technical math term here – ugly.

-Wolczuk, MATH 235

[After we all finally get into the lecture hall, past Wolczuk's bouncers.] Welcome to VIP session #1.

-Wolczuk, MATH 136

[After getting tickets from the bouncers for future lectures.] It'll be \$100 per extra ticket.

-Wolczuk, MATH 136

continued on page 16

The Lord of the EngineeRINGS

It began with the forging of the great Engineering Rings. Three were given to members of the PMAMC&O departments; immortal, wisest and fairest of all mathematicians. Seven, to the CS students, great programmers and coders of the real time labs. And nine, nine rings were gifted to the race of Actuarial Scientists, who above all else desire to manage risk. For within these rings was bound the strength and will to govern each math department.

But they were all of them deceived, for another ring was made. In the land of Engineering, in the fires of Mount RCH, the Dark Lord Douglas Wright forged in secret, a master ring, to control all others. And into this ring he poured his lack of rigor, his “proof by example” and his will to dominate all mathematicians. One ring to rule them all. One by one, the free math departments of the MC fell to the power of the ring.

But there were some who resisted. A last alliance of Statisticians and members of the PMAMC&O departments marched against the armies of Engineering, and on the slopes of Mount RCH, they fought for the freedom of Waterloo math. Victory was near, but the power of the ring could not be undone. It was in this moment, when all hope had faded, that Stanton, son of the king of Math, took up his father’s pink tie and Douglas Wright, enemy of the free mathematicians of Waterloo, was defeated. The ring passed to Stanton, who had this one chance to destroy evil forever...but the hearts of mathematicians are easily corrupted.

And the ring of engineering has a will of its own. It betrayed Stanton, to his death. And some things that should not have been forgotten were lost. History became legend, legend became myth. And for two and half decades, the ring passed out of all knowledge. Until, when chance came, the ring ensnared a new bearer. The ring came to the creature William B Cowan, who took it deep into the tunnels of the real-time lab, and there it consumed him.

The ring gave Cowan an unnatural long life. For one fall semester it poisoned his mind; and in the gloom of Cowan’s real-time lab, it waited. Darkness crept back into the halls of the MC. Rumor grew of a shadow towards Engineering, whispers of a nameless fear, and the Engineering Ring perceived. Its time had now come. It abandoned Cowan.

But something happened that the Engineering Ring did not intend. It was picked up by the most unlikely creature imaginable. A frosh, of the first years. For the time will soon come when frosh will shape the fortunes of all...

Taken from “The Pink Book of the Mathmarch”

The Pink Hand

Find the Longest Path

Assume you have shortest distance between any two buildings on campus being a straight line from the weighted average on the standard plant ops map. If a line intersects any building other than the two buildings it connects, remove it from the potential graph. Let the weight of each edge be one. Find the longest non-intersecting path (that does not visit a node twice).

Submission (with proof) will be rewarded with a copy of a book from the UW Campus Bookstore that is priced \$35 CAD or less. Contact hpgross@uwaterloo.ca with your solutions, or submit them to the *mathNEWS* BLACK BOX.

Russian Reviews: NMRiH

No one made it out

The flashlights of our group of four create long shadows in the alleyway as we run. One stumbling zombie notices us and shuffles towards us as we sprint past. Back onto the street, filled with the burning car wrecks and mobs of undead we run for a side street where a garage awaits. The wall of zombies in front of us is too dense, the point man is able to sprint through them but they close the gaps as he ran through them, we have to clear a path, and fast. Swinging tools and firing small arms, we start thinning the horde in front of us, gunfire drawing all the zombies on the street. One freshly killed undead runs into our midst, grabbing hold of one of our own, biting and tearing. The person screams, shoving the zombie off and letting loose four shots to its chest. Clutching their wound, they follow us as we clear enough room to move onto the side street. The one who made it ahead of us is drawing a crowd as he stands in an open door waiting for us, cautiously peering inside and out in worry. We run around the few shambling dead and into the building, clearing the few shuffling threats within, when our wounded friend falls down. We leave them, delaying just long enough to pocket their bullets, knowing they will soon get up to join the horde. We didn't even make it out of the room before they started stumbling into a crouched position, staring hungrily at our backs. We shut the door behind us.

No More Room in Hell is a wonderfully difficult Source mod that places you and up to seven others in the middle of the zombie apocalypse with the sole mission of escaping. There are weapons of different sorts, with fire-axes, crowbars, and sledge hammers mixed in with pistols, shotguns and rifles. Ammo is very scarce and there is an inhibiting weight-based inventory system, which isn't a problem for experienced players who learn (just like you should in a real zombie apocalypse) that running around zombies and traveling light is generally a better option than fighting them with a massive arsenal. This doesn't work too well against the zombies that run though, which includes any of your teammates who die from infection. If you are watchful and cautious you will likely make it, and having co-operative teammates helps a long way as well. Just remember that you can shove zombies, and that zombies are attracted to light, movement and sound.

If you wish to brave the (sadly) mostly empty servers and possible lag issues, head over to nomoreroominhell.com to pick up the files from the main page, just remember that you need to own a source engine game and have it currently installed for this to work.

Soviet Canadian

U.S. Congress Drops the SOAP

After the great Reddit and Wikipedia black out of January 18, Congress's grasp slipped, and dropped the SOAP. Seeing this, the people of the United States quickly moved into position behind congress, and penetrated the offices of many congressmen and congresswomen with many calls and emails. Recoiling from the incredible display of power from giant... websites and organizations, Congress was sore and unable to pick up the SOAP. Thus, a great victory was achieved, Congress is sore, and SOAP will forever be left on the ground.

Horrorscopes

ActSci: Due to an unfortunate and unforeseen series of circumstances, the ActSci job market has crashed and there aren't any positions available for next coop term. You'd have thought that they would have been able to predict this.

Your unlucky number is: 23% increase in the unemployment rate.

AHS: You're trying to beat your personal record for bench pressing at the PAC. You're about to set the weights when you realize that the disks are missing. You leave, and come back later with four freshly caught geese, and tie them on. It's slightly off balance, but it works.

Your unlucky number is: 80 pounds of national pride on each end.

AMATH: For your elective you're taking a creative writing course, but it's nowhere near as fun as ODEs. You decide to write a series of sonnets about how partial differentiation touches your soul. You fail because it's not in iambic pentameter.

Your unlucky number is: 3 verses, but the response is terse.

ARCH: You're drafted into making a set of plans for the new skyscraper that is going to be erected in Cambridge. You've been single for almost a year now, and decide to make the tower decidedly more phallic in nature than your superiors intended, to curb the loneliness.

Your unlucky number is: 354 days without excitement.

ARTS: Your history professor asks that you submit a twelve-page essay about the usage of the olive oil press in ancient Mayan times by Monday. You get distracted on Wikipedia and read up about the 2012 doomsday prophecy. It has nothing on your prof's reaction on Monday...

Your unlucky number is: 11 more months until the world ends.

C&O: On a long road trip to Mont-Tremblant, the other passengers start singing "99 bottles of beer on the wall". You realize that the song is nothing but a simple exercise in enumeration, and quickly finish the song.

Your unlucky number is: 7 hours of stony silence in the car.

CS: Playing Skyrim, you see that there are too many books for you to read, and not enough time to read them all before the Alduin scorches the earth. You download the audiobooks so you can still enjoy them before the apocalypse.

Your unlucky number is: 102 hours of audio on top of your >500 hours of play time.

Double Degree: You decide to hold a party where your Waterloo friends can finally meet your Laurier friends. Things don't go according to plan when the Laurier folks bring over 6 tankards of booze, and challenge the Waterloo kids to a drink-off.

Your unlucky number is: 17 people in line to worship the porcelain god. Go Warriors go!

ENG: You find your current plan boring and decide to take a minor to spice things up. Your new academic plan now forces you to take 7 courses per term until your final term, in which you'll be taking 8 courses. Still bored?

Your unlucky number is: 2 hours of sleep per night for the next 16 months.

ENV: You see a bulked up human behemoth effortlessly bash in the heads of terrified geese. You run in and try to intervene. Next thing you remember is waking up the next morning with a lump on your head and 4 birds missing.

Your unlucky number is: 8 hours out cold.

Grad: You're busy working on your presentation when your supervisor walks by and drops a pile of papers on your desk. He says that he's too busy to mark a bunch of essays that his students have submitted, so the task falls to you. I guess you're not finishing your thesis until next term.

Your unlucky number is: 117 papers to grade.

KI: You spend your creative thinking class playing with plasticine, and in your following class you're colouring in pictures with crayons. Congratulations, you're paying \$3000/term for kindergarten.

Your unlucky number is: 6 again.

MathBus: With RIM announcing a new CEO, you decide to forecast what the future in the company holds. Scared and scarred by the results, you sell all shares and invest in Nokia. They seem like a safer bet.

Your unlucky number is: 20% of smartphone sales and failing, but with Finnish goodness.

Math Phys: Your quantum lectures are really starting to get confusing. As much as you try to understand what's going on, the more you look the less sense the writing on the board makes.

Your unlucky number is: Undetermined pages of notes.

PMATH: Fourth year assignments are really hard, and it's made even worse by the fact that the only other people who can help you have all graduated. You see a poster advertising a tutorial session, and show up with your homework. The instructor has no clue either.

Your unlucky number is: 450 times the pain.

SCI: You find some great cylindrical masses just lying around and decide to take them back to your lab. Using them in an elaborate experiment to measure the force of gravity, you actually determine that the Earth's pull is stronger in the winter! No wonder the season is so depressing – it really does have a way of getting you down.

Your unlucky number is: 200 pounds of statistically significant coal in the basement.

Soft Eng: So many fucking labs! You have labs within labs, conflicting with your other labs. Prelabs, postlabs, prepostlabs. Don't they realize you can't do this without a time turner?

Your unlucky number is: 169 hours of lab related work per week

STATS: You get suspicious of the University's employment statistics when you get rejected for yet another interview. You take a sample census and determine that the university must be flagrantly lying, since all of the respondents reported that they still haven't had a single employer interview. You report your findings, but are laughed off when it is revealed who your sample was.

Your unlucky number is: X^2 degrees of stupidity.

Teaching Option: You see that your resume doesn't have much in the way of relevant work experience when it comes to teaching. You start holding tutorial sessions for anyone who wants help; but give up after one student asks you to help them with their Lebesgue assignment.

Your unlucky number is: 0 relevant jobs still...

Undeclared: You don't know what to apply for; there are too many choices. You decide to apply for as many different types of jobs as possible, and see what works out. You're not qualified for any of them though.

Your unlucky number is: 50 rejections.

profQUOTES*Now with even more lulz*

Crap happens.

-Petrick, CS 136

What's a combinatorial number? Well, it's a number that you would see in a combinatorial class

-Purbhoo, MATH 249

So, as you can see, the people who wrote Sesame Street when I was a kid were clearly on drugs.

-Hinek, CS 240

The point of introducing terminology is to introduce more terminology.

-Purbhoo, MATH 249

Or, maybe you discover, that there's a large market in China. They use... a whole sentence in this one little character. And now you have all this space in your button.

-Becker, CS 349

For assignment 2 I reached deep down into my sadistic soul for the toughest questions, and then I decided that I put too many of them, so you can take relief in that.

-Purbhoo, MATH 249

I can't rush this in 5 minutes and leave me satisfied or you satisfied

-Rubeinstein, PMATH 340

It's always good to turn vague things into formal things and vice versa.

-Purbhoo, MATH 249

In recent Actuarial research... well, if 1729 is considered recent

-Shi, ACTSC 232

And just to confuse you – not to say that there isn't enough of that in this course

-Purbhoo, MATH 249

After writing two papers, this actuary is still not satisfied and makes yet another model and makes another paper. Good for him, but unfortunately for you, you need to learn all of these.

-Shi, ACTSC 232

If you do this in your Real Analysis class, they'll take away your math licence, but you're safe here.

-Katz, MATH 249

The registrar seems to think that a class shouldn't have more people than chairs, which makes sense in some sort of way, if you think sense is important. Of course, what we need is more chairs; there's a nice room next door with some extras.

-Purbhoo, MATH 249

If I fall asleep... Well, someone's already offered to throw something soft at me.

-Matheson, ACTSC 371

You should write angry letters to all of these university people asking why they are building so many new buildings without new classrooms.

-Purbhoo, MATH 249

It seems that we are without a clock today, so I suppose I can hold you for as long as I want.

-Matheson, ACTSC 371

Because of the smaller boards [in the new room] I'm going to need to write smaller, and all of you are going to need better eyes.

-Purbhoo, MATH 249

This is something you should know because it is important, but it won't be on the exam. Of course, that means nobody is going to write it down.

-Matheson, ACTSC 371

You never know if you're overlooking something simple or if it is really hard. Welcome to real life.

-Purbhoo, MATH 249

I wish I can do the men-in-black thing to erase your memory and start over.

-Matheson, ACTSC 371

At the end of the day, the algebraic proof is the one that the trained monkey can do. A very well-trained monkey with a few years of math education.

-Purbhoo, MATH 249

We think about the rate-limiting step a lot. For example, in group work, we think 'He's the rate-limiting step'.

-Matheson, ACTSC 371

I teach now [10:30 – 11:30] and again at 1:30, and in between a few of my friends are getting married today, so there will be no office hours today.

-Purbhoo, MATH 249

We don't have enough time to do what I wanted to do, so I'm just going to show you some nice pictures and leave.

-Morris, MATH 247

There is a lot of room for disbelief in this proof, but by the end of this course I hope to convince you otherwise.

-Purbhoo, MATH 249

I have you come up and estimate that your height is 165cm tall. I don't even know how tall that is, so it's a very crude measurement.

-Balka, STAT 331

Just wondering, are you the guys that keep drawing cocks on Eddie's door?

-Loo, MATH 135

profQUOTES

They just keep going and going...

An AND gate is kind of like a gate

-Kennings ECE 124

You can't confine infinity... Kinda like putting god in a container

-Dupont, MATH 119

Don't be shy, I have candy

-Dupont, MATH 119

Finding 'k' is where the work is at DAWG

-Dupont, MATH 119

After the midterm you might need some cocaine to stay awake

-Dupont, MATH 119

We are going to use this in a minute, so I'm going to label it appropriately with a triforme

-Dupont, MATH 119

Right now I'm riding a toner high

-Dupont, MATH 119

DON'T SAY LEAFS! Okay? You're getting a university education here, from... not Laurier.

-The Almighty Troy, CS 135

Mathematicians have invented these edges without nodes called 'hyper edges'. I don't know what that means, because I didn't do drugs in the sixties.

-The Almighty Troy, CS 135

Here's what computer scientists do when they have 40 years to solve a problem: they wait 39 years, and then solve the problem.

-The Almighty Troy, CS 135

N Reasons to Go Watch FASS

Waldo is excited to put on a drama production again!

WARNING: Out of context spoilers ahead, but come see the show for it to make sense!

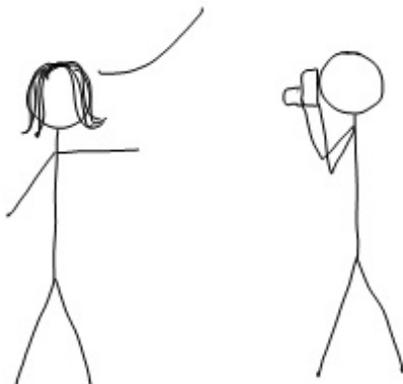
- Mild language
- Maniacs
- Questionable nudity?
- Song and dance and repetition!
- A story that MAKES SENSE!
- Cardboard is trippy
- Hilarity
- Historical accuracy (sort of...)
- Death by Heather
- An act of bacon
- It's a special birthday!
- Audience participation night at the 10:30 pm show on Friday
- Pirates, ninjas, time machines...who could ask for more?

waldo@<3.LE-GASP.ca



PHOTOGRAPHY SCHOOL

TO CORRECT YOUR EXPOSURE, ADJUST YOUR APERTURE DOWN BY TWO F-STOPS!



WHAT I WANTED

GET TO KNOW YOUR SUBJECT! MAKE FRIENDS WITH THE SHAPE + TEXTURE!



WHAT I GOT

Snippet

