

# math NEWS

Volume 109, Issue 4

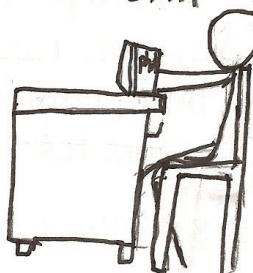
Friday, March 6th, 2009

Mid term Ramblings -SPECIAL  
by: (define this (not cool)) EDITION

What are you  
doing?



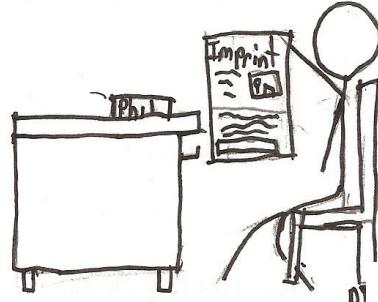
Studying for  
the Phil 100  
Midterm



Phil 100? But I  
thought your  
elective was  
Econ 102



It was either  
this, or read  
Imprint.



Consider It Brought



## lookAHEAD

### **mathNEWS**

March 6th	<i>mathNEWS</i> owns Imprint sans effort
March 16th	<i>mathNEWS</i> writers re-convene to eat pizza and mock everything.
March 20th	Join us at 6:30 in MathSoc if interested. <i>mathNEWS</i> triumphantly reveals a new issue!

### **MathSoc**

Wednesdays	Games Night
Thursdays	Movie Night
March 13	Pseudo-Pi Day

### **CECS**

From now on	Continuous Phase
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### **General**

March 17	St Patrick's Day
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## mastHEAD

*So much to do, so little time.*

This last weekend was incredibly busy for me. Between an Orientation retreat, the filming of *mathNEWS* in the Morning, and figuring out how I was going to respond to Imprint's pathetic attempt at a flame war, I hardly had time to sleep. But that's OK, because I have a mass of people who are willing to do my bidding for a slice of pizza. Hooray!

Imprint has told us to "Bring it". We will later. For now, though, I have to thank my staff for making my life slightly easier than it otherwise would be. This week, I put lemons on their pizza and asked them to complete the sentence "When life gives you lemons...". Their responses: Brucey- $\pi$  (Make highly concentrated citric acid!), 8-Ball (Squirt the juice in peoples' eyes), unja (I'd give them to flat-chested women), Tbor (Drop out of math and start a rap career [*Oh gawd no! — InsidED*]), aborted (Squirt them in your friendly *mathNEWS* writer's eyes), snippet (Build a lemon catapult), Megaton Panda (Sell lemons for a living), Sector\_Corrupt (Genetically engineer a breed of lemon warriors and have a hostile takeover of *mathNEWS*), The *mathNEWS* Resident Softie (Throw them like dodgeballs at random editors), Lich (Derive from the situation a bland metaphor on optimism), Sexy Whore (pour lemon juice on Imprint).

As always, thanks to Graphics for allowing us to torture everyone like we do. Thanks also to midterms for continuing to steal my staff. Finally, thanks to Maggie Clark for providing us with an easy target to humiliate. Well, easier than she normally does.

InsidED (Use the juice as invisible ink to send profane messages to other campus publications)

## WatSoc Wants You

Do you like to meet new people? Do you like anime or video games? Join WATSOC for its annual trip to Anime North! Meet famous artists, voice actors, and industry insiders from North America and Japan, take part in a variety of discussions, contests, games, and more. We handle transportation, accommodation, and the passes so you don't have to.

Student discounts are available, first deadline is March 11. Complete details available at <http://animenorth.watsoc.ca>

Nicholas Terwood

## CSC Flash

Calum T. Dalek is otherwise occupied this week so the task of writing this flash has been (hastily) delegated to a willing subject. So, what's up with the CSC?

- **Prabhakar Ragde Talk on Functional Lexing and Parsing:** Monday, March 9 at 3:00PM in DC 1302. This talk will describe a non-traditional functional approach to the classical problems of lexing (breaking a stream of characters into "words" or tokens) and parsing (identifying tree structure in a stream of tokens based on a grammar, e.g. for a programming language that needs to be compiled or interpreted). The functional approach can clarify and organize a number of algorithms that tend to be opaque in their conventional imperative presentation. No prior background in functional programming, lexing, or parsing is assumed.
- **Raymond Laflamme Talk on Quantum Computing:** Thursday, March 12 at the Institute for Quantum Computing. We will be meeting at the CSC office and organizing the journey to the IQC around 4:00-4:15PM. This talk will describe why quantum computing is great and delve into the programming of quantum computers.
- **Canadian Undergraduate Technology Conference:** Starting at 8:00AM on Thursday, March 12 at the Toronto Hilton. The Canadian Undergraduate Technology Conference is Canada's largest student-run conference. From humble roots it has emerged as a venue that offers an environment for students to grow socially, academically, and professionally. The conference targets to exceed its past record of 600 students from 47 respected institutions nationwide. The event mingles ambitious as well as talented students with leaders from academia and industry to offer memorable experiences and valuable opportunities. For more information, visit [www.cutc.ca](http://www.cutc.ca).

snippet, on behalf of:

Calum T. Dalek

Chairbeing Extraordinaire

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*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, though we do like the fact that they give us money. 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](mailto:mathnews@student.math.uwaterloo.ca) on the Internet.

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Master of All Flame Wars: Joe Collins

## Prez Sez

*I'm writing this for free pizza.*

Hey mathies, I'm not kidding, I'm actually writing this for free pizza because I'm too lazy to go home and make real food. Did you know **mathNEWS** gives you food for writing articles? They do! It's awesome.

Now to give an update on what MathSoc has been up to. There was this thing called reading week and there is this week before it and a week after it and I assure you they are painful with copious amounts of work related to academics. However, I managed some stuff done, here we go...

The CnD Management Board has been filled and we will meet probably on the day you read this. Additionally, we passed a new clubs policy that requires clubs to spend MathSoc money on more than just free food for its members. I also wrote up some policy changes that lead to heated debates between honourary lifetime members and undergraduates with regards to the executive workload. A council member, Scott McKee, took the initiative to create a committee of MathSoc to review the executive structure and its transition practices. I look forward to seeing the results.

MathSoc is also having an election. Our goals are to have every math student be able to vote without hiccup [*namely we Softies and the CFM kids — InsidED*], and to release the results on time. Nominations close today at 4:30pm for Summer Exec as well as Fall President and VPF. On that note, I will be resigning at the

end of this term, but never fear, for I'll still be around!

In the world outside of the MC, the winners of the FEDS Election are Allan Babor for President, Sarah Cook for VP Internal, and Justin Williams for VP Education. Congratulations also go out to Ian Kasper, Christine Thayer, and Tareq Ismail for winning the FEDS Math Councillor and of course our very own VP Finance Ajnu Jacob for Math Senate.

Additionally, there is a penny pinchers competition going on with Engineering. These are the rules, if you put a penny in a jar that team gets a point and if you put anything else in a jar that team gets the negative value of cents (putting a dime in results in -10 points for that team). If Math wins, Cat Hay (EngSoc President) will be dyed pink for both the next EngSoc and MathSoc meeting. If Engineering wins, I get dyed purple for both the next EngSoc Meeting and MathSoc meeting. Please give me your pennies, or give Engineering anything else. Math Jars can be found in MathSoc, Math CnD, SLC Turnkey Desk, and me. Engineering Jars can be found in EngSoc, Engineering CnD, SLC Turnkey Desk, and Cat Hay.

*[If Software wins (i.e. both teams get negative), will both of you get dyed? — InsidED]*

Hope you're all having a fantastic term!

Chris "Brucey-Pi" Neal  
MathSoc President

[prez@mathsoc.uwaterloo.ca](mailto: prez@mathsoc.uwaterloo.ca)

## VPF Sez

*All that glitters are gold rings and silver fields*

the term.

I would also like to inform my mathies [*Your mathies? — InsidED*] that I have officially stopped accepting Mathletics Funding Forms, and for those social members who submitted such a form, you will be receiving notifications on how to come by and collect cheques for this. Lastly, for those students who are reading this and had requested for a MathSOC fee refund, you too will be notified about when the cheques would be ready for your collection. [*You should also come by the MathSOC office to check the status of said refund. — InsidED*]

Thank you all for reading this and I wish you the very best for the rest of this term.

Ajnu Jacob  
Vice President, Finance  
Mathematics Society  
[vpf@mathsoc.uwaterloo.ca](mailto: vpf@mathsoc.uwaterloo.ca)

## VPAS Sez

*Hey Mathies!*

I wrote this article so that the **mathNEWS** editor wouldn't hurt me for not writing another VPAS sez (would've been twice in a row!).

I am in the middle of studying for 2 midterms this week with another one on the way! Anywho, I hope you enjoyed Square Root Day! The next one will be 04/04/2016. So bother the MathSoc execs during that time for another fun filled day of free food!

On that note, Pi Day is coming up! However, it is on a Satur-

day. Boo. So in order for us to give YOU, mathies, free PIE on the 3rd floor of MC at 1:59 pm, we'll be celebrating PSEUDO Pi Day on Friday, March 13th at 1:59 pm!

See you then!

Maria Christina Greco  
VP, Activities and Services  
Mathematics Society  
[vpas@mathsoc.uwaterloo.ca](mailto: vpas@mathsoc.uwaterloo.ca)

## Fully-Funded Travel and Academics

### Waterloo-Haifa International Program

Heather Reisman, Founder and Chief Executive Officer of Indigo Books and Music Inc. (now Chapters Indigo), and Gerry Schwartz, Chair and Chief Executive Officer of Onex Corporation, have donated \$500,000 to the University of Waterloo for undergraduate student education and travel.

All types of Mathematics, Computer Science or Software Engineering students are encouraged to apply for travel to the University of Haifa in Haifa, Israel. No knowledge of Hebrew is necessary! The donors would like our Waterloo students to experience the culture and life of Israel and are willing to pay for travel, accommodation, food, tuition, cultural visits and all other expenses. Although the exchange is with the University of Haifa, students will be able to travel extensively within Israel (funded) and elsewhere.

Students may travel in groups, with friends, or whatever makes you comfortable. There are four options for travel so far:

- A normal academic exchange taking Math and CS courses in Hebrew
- A normal academic exchange taking elective courses in English
- A four-month research work term in English
- A four-week cultural exchange in August in English
- If you can think of other options, we are willing to work with you.

We have just had a Haifa Information Session on Tuesday, March 3. If you missed it and want more information, please contact Anne Banks Pidduck, [apidduck@uwaterloo.ca](mailto:apidduck@uwaterloo.ca).

## PMAMC&OC

### Integration Bee

Get ready for the third annual Integration Bee! Contestants will be given a series of integrals and a set amount of time to compute them. You may compete in singles or pairs, and there is \$100 in prizes to be won! Come on out to face off against professors (invite your professors), or cheer on your peers. Pizza, pop, and scrap paper will be provided (but not writing utensils). The competition, funded by MathSoc, will take place on Wednesday, March 11, from 5:30PM — 9:00PM, in MC 2066. For more information, e-mail us at [pmclub@gmail.com](mailto:pmclub@gmail.com) or visit us online at <http://pmclub.uwaterloo.ca/>.

### SASMS

As with every other term, we are hosting the Short Attention Span Math Seminars with help from MathSoc. Unlike other terms, we will be having TWO days of SASMS! Students give 25 minute talks on interesting mathematics topics. Food and drinks will be provided; SASMS will be held on Wednesday, March 25, and Thursday, March 26, from 5:00PM – 10:30PM, held in MC 5054. As above, e-mail us at [pmclub@gmail.com](mailto:pmclub@gmail.com) or visit us online at <http://pmclub.uwaterloo.ca/> for more information.

PMC executives

## Dating advice from the single girl

*Dear single girl:* I went to Cuba over Reading Week. At first, I didn't even want to go to Cuba because I had so much school work to do. But since I had already paid for the trip, I went - leaving all my important assignments and midterm studying behind. I'm so glad I went because I met the man of my dreams! Not only is he a great lover, but when I'm with him I feel like I can factor large numbers in polynomial time. Unfortunately, he's Cuban and I cannot bring him back to Canada with me. The import duties on humans are already quite high, but since he is such a great man (and I will solve one of the most important unsolved problems in mathematics because of him), the value added tax on him is close to infinity and I certainly cannot afford it. But I love him and cannot live without him. What should I do?

-sin amor

Dear *sin amor*: I feel your pain. But do not worry. You have a number of options:

1. Move to Cuba: You will be with him which will allow you to factor large numbers. Banks will pay you millions to not break into their security system. However, because of Cuba's socialist ideals, any money you make will have to be shared with the entire population of Cuba - which should be fine - because Cuba gave you love and you cannot put a price on love.

2. Write a research proposal and maybe some organization will take pity on you and give you enough grant money to cover his VAT.

3. Marry him - A little over the top, but if you marry him, he will be exempt from all import duties levied on him.

Whichever option you choose, I wish you the best of luck in your future endeavours.

*Dear single girl:* This is my last term here at Waterloo, and I'm quite excited to graduate. Obviously I want to celebrate leaving this town by going to the Math Grad Ball. Unfortunately, I don't have a date. Can you please help me find a date ASAP?

- Dateless

Dear *Dateless*: Who cares? I would go solo. But if you really don't want to go alone then you have two options - either ask to be put at a table with a group of 7 other people (there are 8 people to a table) - given the odd number of friends, one of them is guaranteed to be single so you can spend the entire night buying this single person drinks, so at the end of the night, they'll come home with you. Or you can gather a group of friends and just go with them.

Single in CO - [single.in.co@gmail.com](mailto:single.in.co@gmail.com)

## Y2K Filler

### Gripe #1

Why won't they let me bring banana peels and turtle shells with me when I drive go-karts? What's the point?

### Gripe #2

Why is the new train track for the real-time course so boring? I mean, no tunnels, no jumps, no third-dimension period.

CAS  
SOO Editor

# MathSoups

So, I've been battling a cold through the first half of reading week. It started out slowly on the Thursday before Reading Week and still hadn't really gone away by Family Day. So I was talking to my parents, and they recommended soups. Soups remind me of going to my aunt's place in the mountains for dinner. She would always make at least two soups, and always there would be her amazing chicken corn soup and her sweet & sour soup, an integral part of the faux-Chinese cooking style back home. But even though I loved her soups, they were always too brothy to fill me up. I'd always compensate by putting shrimp crackers or something else crunchy in to the soup. Hence the soups I made to relieve myself of my cold symptoms are soups of substance, but still brothy enough to relieve my throat. The first soup is chicken broth based, which is fortunately nowadays available as cans or bouillon cubes where you just add water. The second soup is more influenced by Asian ingredients, and is a bit more involved than the first recipe.

Nutritional benefits of the first soup are that the chicken broth is widely-renowned to be good at relieving cold symptoms, frozen veggies are really good for you (sometimes even better than fresh veggies) and contain a lot of antioxidants, while the spaghetti adds enough carbohydrates to make the soup nearly a meal. Nutritional benefits of the second soup include the high catechin-to-caffeine ratio of Bai Mu Tan Cha, and healing properties of cumin, and sinus-clearing abilities of pepper powders.

## Shrimp & Veggies Noodle Soup

- 500 mL Chicken Broth
- 2 tsp salt
- 500 mL hot tap water
- 12-15 Shrimps (use frozen, deveined, shelled shrimps available at Zehrs Conestoga)
- 1/4 package of any frozen vegetable package
- 1.5 handfuls of Spaghettini, broken into smaller pieces on top of saucepan

Create chicken broth following package instructions. Add hot water to thin it out. Let it boil in a saucepan. Add Frozen Veggies and stir. Add Frozen Shrimp and stir. Return to a boil. Add Spaghettini & salt to the pot and let boil for however long it says on package directions (typically 8 minutes). Stir every 30

## Schroedinger's Directory

*Because the CSUE isn't weird enough already.*

In some deep recess of a student.cs account...

```
>ls
fldrA fldrB fldrC
>rmdir fldrA
rmdir: fldrA: Not a directory
>cat fldrA
cat: fldrA: Is a directory
```

...So, which is it?

HZ

seconds to keep spaghettini from sticking to other ingredients. Sample a spaghettini strand and a shrimp, if both seem cooked, then serve steaming hot.

## Chicken, Lychee and White Tea Soup

- 2 boneless, skinless chicken thighs
- 1 teabag of Bai Mu Tan Cha, it's a type of tea available at Zehrs Conestoga (barely-processed tea from Fujian Province, marketed as White Tea)
- 750 mL hot water
- 1 Red Onion
- 2 Lychee Nuts, available during winter at Zehrs Conestoga (a Central Asian fruit)
- 2 tbsps cumin
- 1 tbsp salt
- 1-2 tbsps black pepper powder or cayenne pepper powder or both

In a saucepan, create white tea by putting the teabag in hot water and let it just reach a boil. Then stir around the teabag and let sit for 3 minutes. Now we can toss the teabag, note the significant change in colour. Now we need to dump in the raw chicken thighs. Now chop the red onions and dump them in. By the time you're done chopping; the bottom of the chicken thigh would have started to half-cook. Flip over the two chicken thighs to let the top side (that was not in contact with the tea) cook. Now peel the red/brown/yellow cover off of the lychee nuts and throw them in. If you've never peeled lychee nuts before, go slowly and buy more than 2 so that you can eat those that don't survive your attempts at peeling. Note that the black core of the lychee nut is inedible. After you've added the lychee nuts, add in the cumin, salt and pepper powders. Stir for 2 seconds and then let it be for about 5 minutes. After about 5 minutes, use a spoon to take out the 2 thighs, chop them up and put them back in. Use a spoon to take out the two lychee nuts, and separate the lychee meat from the black core. Throw the black core out. Then cover and let the soup heat for 6 minutes. Stir and serve.

Mar<sup>2</sup>

## N.P.T.F.I.M.C.

*Expressing Our Fundamental Freedom to Not Wear Pants*

More affectionately known by its participants as "No Pants Friday", the first rendition (Friday, February 13) was a huge success and involved much enjoyment of freedom from the oppressiveness of pants. A pantsless journey was also undertaken to watch former Prime Minister Paul Martin speak in the SLC and a memorable picture was taken afterwards. This past Friday, No Pants Day was undertaken again and more good fun was had ordering random people to remove pants. For more information on participating, search for the "No Pants Day this Friday in the Math Building" Facebook group or keep an eye out for the handy flow charts distributed around the MC.

*/mathNEWS recommends, should you decide not to wear pants, that an alternative substitute (for example, a skirt or a kilt) be worn instead. —InsidED]*

Pantsless Libertine

**mathNEWSmailBAG*****Re: Yo! First Years! (13 February 2009)***

While I have no doubt that Arcsin has good intentions, I find the tone of his article to be unprofessional, inflammatory and disrespectful. Perhaps a pre-article meeting with the PD1 instructor (me) and/or the WatPD manager (Veronica Brown) to better understand the rationale behind the PD1 resume content would have been useful.

That said, I do agree with Arcsin on a number of points. Each student should include the skills, knowledge, and previous experience that they believe will serve them best and should organize that content in whatever way they choose. And choosing to include a less substantive project or one that will not set them apart certainly doesn't make sense.

While we have developed some standard advice and a marking rubric, TAs are trained to mark the content of each resume without regard for the headings the student chooses to use. If a student creates functional headings (e.g., leadership experience) or uses a different font, this is not a problem and marks should not be deducted. In fact, one of the three templates demonstrates the functional heading approach.

It seems as though Arcsin may not have read the PD1 materials thoroughly. For example, highlighting computer skills in a separate section is something that we recommend. And we do indicate that including an objective is optional.

I expect that you can appreciate that to ensure that the many hundreds of resumes to be marked are marked fairly, some best practices must be developed and applied to the task.

Please be assured that such best practices are not created in a vacuum. As recently as late last fall I sought advice from employers. In this case, I asked them to review, rate, and provide feedback on our resume rubric. I'm pleased to report that the resulting feedback confirmed that our advice to students fits what employers say they want to see in a well-crafted resume.

PD1 was created to help incoming co-op students to get off on the right foot. Based on feedback from both employers and (a majority of) students, it seems that it does just that.

Kerry Mahoney  
Director, Career Services

**What's up there?**

Over the reading week and my very long time in REV alone, I have had some more thoughts of what the University (or the Math Faculty) is actually doing on top of the math Building. I've also had some help from some friends (thanks for the email Daniel!).

- Dragon Storage Container
- *mathNEWS'* secret bunker for officers only
- A giant pile of pink pipe cleaners
- A giant Magic X-Ray machine designed to spy on Imprint
- Cloning Lab to make the ultimate math student
- Imprint incinerator
- Plotting a conspiracy against Imprint
- Machine Gun Posts
- Dislodging the Pink Tie which is currently frozen to the roof
- Cleaning up Santa's Crash Site
- Competing with the nanotech construction to see who can be the most annoying to students

Baxter

**Which Operating System are you?*****Yes, Mockery will ensue***

So, in an argument with a CS major over which of us was stuck being Windows Vista, I began to formulate an idea. Operating systems are everywhere. People are everywhere... Does the connection end there?

If they did I wouldn't have much of an article idea, and since I refuse, I present to you, Operating Systems, and the kinds of people they represent!

**Unix-** Unix is big, important and ancient. But it has given birth to dozens of disciplines and in the end, if you want to do something right, you're doing it with Unix or a Unix based system. So, Unix is Math. Math gave birth to everything that matters... Ask XKCD!

**Debian/Ubuntu-** It's born from Unix, and it's damn handy. So for all you CS-ers out there, Congrats, you're Debian/Ubuntu! It's a good place to be.

**Slackware/Gentoo/other complicated Gnu/Linux Distros-** You're Software Engineering. You are basically like CS, aka Debian/etc, but with 10X the work for what again? Bragging rights?

**Windows Vista-** Much like an Arts student, Windows Vista is pretty. (*aka, there's 6X as many girls in my Arts Elective as in my program*) Also like an Arts student, the second you give it more than the most minor of tasks, it spend the rest of the time bitching at you. Sorry Artsies, but some of us actually do more than 3 assignments a term!

**Windows XP-** Dependable and Widespread, I think we can regard this as a general descriptor for the average person. It looks average, it works average, and in the end, it's just not that interesting to talk about. Have fun being normal, normal people!

**Windows ME-** Yep, you guessed it, Engineers. Completely useless and widely regarded as a plague upon society, Windows ME has at least that in common with the Engineers. **BUT** unlike the engineers, at least ME didn't smell.

**Mac OSX-** Looks really good, and unfathomable. You don't know quite how it works but it's sexy and easygoing. Anyone can use it. Much like a *mathNEWS* Writer. Sexy, Witty, and oh so fun to be around, pick yourself up one today! *[This advertisement brought to you by the lonely *mathNEWS* writer's union — InsidED]*

**Hard-Coded-Wiring-** Capable of one thing, and one thing only, but it's very good at it. Tragically, the Imprint has been designed solely to make every other newspaper look good. Of course, they've honed it to an efficiency Engineers could be jealous of, if only they weren't busy being drunk and envying mathies.

Hopefully I've given you insight into what kind of Operating system you are. If I haven't, it doesn't matter, I wrote an article and I'm going to go have Pizza right now. Also, Imprint sucks. End Of Line /Tron Reference

Sector\_Corrupt

**Refund Checks**

If you requested a refund from MathSoc, please go to the MathSoc office to check its status. Ask for Joe.

InsidED

# Interesting Math

## Estimating puzzle sizes

Suppose we have an  $N \times N$  puzzle, but we don't know the value of  $N$ . We then pick out  $C$  pieces; can we make a reasonable estimate for  $N$  based on the information from these  $C$  pieces?

We will begin by examining the classic "capture–recapture" problem. We are trying to estimate  $N$ , the total population of a particular animal in an area, and we will make two trips of limited duration to make our estimate. On the first trip, we capture  $M$  animals and mark them with something that will remain noticeable until our second visit, and release them back into the wild. On the second trip, we capture  $C$  animals, and find that  $R$  of them were recaptured — they have marks. We make the estimate that the proportion of marked animals captured in the 2nd visit is about the proportion of marked animals out of the overall population, so that  $C/N = R/M$ , and we can solve for  $N = (MC)/R$ . There is a more accurate formula, to negate bias in the population estimate, given by  $N = ((M+1)(C+1))/(R+1) - 1$ . The reason for this involves statistics, which I refuse to do, so I'll leave it as an exercise.

Going back to the puzzle problem, we will now make the simplifying assumption that edge pieces and interior pieces are indistinguishable, but we can still tell corners apart from these. Then we have effectively "marked" 4 pieces, the corners, so that in the capture–recapture formula, we have  $M = 4$ . Picking out  $C$  pieces, we check how many are "marked" i.e. corners, say there are  $R$  of them. Then we can make an estimate for  $N$  since  $N^2 = (5(C+1))/(R+1) - 1$  (recall that we had an  $N \times N$  puzzle).

We could also look at the edges, so suppose the edges and corners are indistinguishable from each other, but are distinct from the interior pieces in appearance. Then we have effectively marked  $M = 4N - 4$  pieces, and we can again apply the formula to this value. Notice this is a more appropriate answer, since having only 4 corners makes our confidence much lower; I hope this is clear. Now, as  $M$  is in terms of  $N$ , notice we will have to do some algebra to find  $N$ . We have

## Mutant Badger Safety

You have probably seen some recent changes around the school. To bring you into the loop, over the reading week a entire flock of Mutant Badgers escaped from their holding cell in the SLC. These badgers are not dangerous if left alone, but when humans are in range or in sight they may hiss, or they may cause you to spontaneously soil yourself. To avoid this from happening I am here with another list of things to keep you safe until the badger have been dealt with.

- The Badgers like to hide in dark places and they feel endangered if they are left in the dark with something of a different species. They are typically like a grue. It is best to avoid this.
- Wearing yellow, red or blue or any combination of those three vectors is not advised as the badgers do not like those colours, or combinations of them.
- If you do end up soiling yourself there are 'clean up and incineration' booths setup in secure locations around campus.

$$N^2 = ((4N - 3)(C + 1))/(R + 1) - 1$$

$$N^2 - N(4(C + 1))/(R + 1) + ((3(C + 1))/(R + 1) + 1) = 0,$$

and now it's a simple application of the quadratic formula. An even better approximation would be to modify the capture–recapture formula to work for 3 categories (say, with two different ways to mark things), and then apply it with 4 corners and  $4N - 8$  edges. You can go further by calculating the accuracy of your guess and come up with a confidence interval, and use the fact that  $N^2$  is a perfect square. For example, if your calculation yielded  $N^2 = 107.5$ , you would be more often correct in guessing  $N = 10$  than  $N = 11$ . With that note, why restrict ourselves to working with square puzzles? It is perfectly reasonable (and in fact, more common) for puzzles to be rectangular, so that we have  $N_1 \times N_2$  pieces. You could try applying the same analyses as above, and get a family of estimations. To further refine your guess, we could apply a weighting to each size of rectangle. For example, the most common configuration for thousand piece puzzles will have a side length ratio of about 1.41 to 1. That is, we would have an  $N \times 1.41N$  piece puzzle, and now we can use our previous formulae with a scaling factor of 1.41. In this case, when calculating the confidence, we would have to take into account the relative abundances of different ratios of side lengths.

Next issue, I will talk more about this problem from a different approach, and introduce another concept along with it. Until then, have fun with your puzzles and guessing how big they are. Or if you'd prefer, try out the following problems.

### Vince's problems of the issue

1) Find a metric on the real line such that 2 is closer to 0 than any real number.

2) Recall every inner product gives rise to an associated norm. Prove the converse does not hold, by finding a Banach space which is not an inner product space.

Vince Chan  
v2chan@student.math.uwaterloo.ca

- Any emotion shown around the Badger may cause it to be irrational and cause you to soil yourself. Taking a bi-hourly dose of Prozium can help control these emotions.
- Badgers have been seen patrolling the perimeter of the school and attacking students who try to exit the school grounds. Leaving the school grounds is not recommended until further notice.

The University is doing their part, as you can see around the campus. The university feels as making these badgers feel at home is the safest way to keep their students safe. They have started on a campus wide campaign to put a white plastic tile over every building so that the Badgers are not disturbed.

And by just following these simple instructions you too can help keep these wonderful animals safe and at home.

Thanks for your cooperation.

Baxter (Rated EC-10)

## Point vs Counterpoint

### Why Imprint Sucks

Two weeks ago, our “friends” at Imprint proved that they need to take a lesson on basic sensitivity training. When *InsidED* wrote a letter to them saying that even the publication that *admits* to having low publication standards wouldn’t publish stuff like Shaniqua wrote, they put some random words on a piece of paper in an attempt to insult us. It’s sad when you’re called out by people like us on legitimate issues.

So, what is wrong with Imprint, you ask? Firstly, their purpose is unknown to campus. The other two campus publications, *mathNEWS* and Iron Warrior, have well-defined purposes. Iron Warrior focuses on news with a little bit of humour, while *mathNEWS* focuses on humour with a little bit of news. Apparently, someone at Imprint thought that combining two good publications would make a great publication, but when they’re on opposite ends of the spectrum, it just doesn’t work.

It’s evident that they don’t really focus on news. Many of their news articles, for want of a better term, are either biased, opinionated, or flat-out wrong. I mean, plagiarism is bad, but is it really a crime? As well, would it hurt to get some genders right? Our Senator-Elect is not a “he”, if you haven’t noticed. I’d go

more in-depth about the many problems with Imprint, but as this paper might make an appearance at March Break Open House, I’d better not...

Satire is also something that they don’t do very well. Case in point: Shaniqua. She is very good at taking legitimate questions and coming up with answers designed to destroy their lives forever. At least we have the dignity to either make up our own questions (and make it obvious that we’re doing so), or answer legit questions with legit answers. Alas, some people continue to make the mistake of confusing Imprint with a legitimate publication. And I’m still trying to figure out that comic with the fountains. If anyone has any clue whatsoever as to what it’s supposed to mean, please let me know.

Every publication should have some clear purpose, and be able to stick with it. The purpose of Imprint, as far as I can tell, is to ask the question “What the bloody hell is this and why am I paying good money for it?” And so I advise Imprint to decide if their purpose is news or satire, because they clearly cannot do both effectively.

The *mathNEWS* Resident Softie

### Why Imprint Rocks

Well, not exactly, but I guess I couldn’t expect anything more from a campus publication. Imprint fulfills all my daily reading needs, and much more.

Saves time: I usually grab a newspaper when I have about 15 minutes to kill: not enough to sit down and do something, but too much to just wander around. I am never in danger of losing track of time when reading Imprint, as each article averages no more than 30 seconds of read-worthy content. If I had any more time than that, I get the National Post or the Record.

Diversity of topics: I am simply fascinated by the vast array of topics that make it into Imprint in the form of articles, the kind that would put real newspapers out of business if they printed it. I don’t mind though; after all, the pros and cons of Windows 7, the pros written by some Windows fanboy and the cons by a person of similar title in the Mac camp was objective reporting at

its finest.

Makes me feel better about my English skills: I used to be very jealous of newspaper article writers for their mastery of the English language, but Imprint really cured that for me. It shifted me out of my melancholy state with their “shifts” without the “f” in it. Perhaps there’s something wrong with their “sisytem”, in which case it also makes me feel good about my typesetting skills.

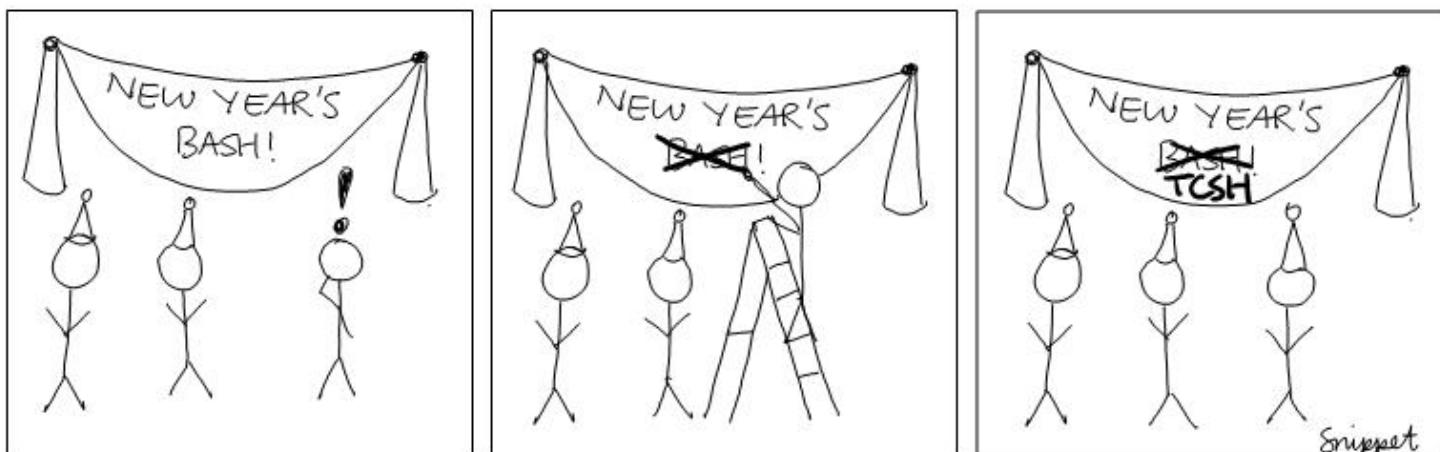
Innovative puzzles: I must admit, I have never been able to do a newspaper crossword if the solutions weren’t right beside it.

Target for *mathNEWS*: I (seriously) appreciate the existence of Imprint when things get inflammatory during production nights. Taking shots at a certain engineering publication is below even something like *mathNEWS* [*unless they provoke it — InsidED*].

So I say to the Imprint production staff: keep’em coming!

Lich

### SHELL SHOCK



## ElseWhen

As of the writing of this ElseWhen, the issue realeased exactly 25 years ago (March 2, 1984). This issue of *mathNEWS* was titled “Twist Your Mind.” Below are some of the highlights of this issue:

- Fed’s Flick for the week was Monty Python’s The Meaning of Life
- MathSoc’s net budget for the winter 1984 term was \$15165, for all you MathBus/MathCA students on campus this term.
- Pretty in Pink Wine & Cheese was held on March 17. 4 Free wines with Pink Tie

An interesting article in this issue of ElseWhen was the hardware review of the issue on the Volker-Craig 303. Below are a few features of the retro terminal:

- Keyboard which can generate all 128 ASCII codes! Even our keyboards today can’t do that. In fact, the non-standard keyboard was advanced enough to use a pseudo-random number generator to determine whether there should be one, two or no keystrokes should be produced when a key is hit.
- It supported baud rates ranging from 110 to 9600. Oh yeah, baby!
- The screen featured (limited) full-screen capability, complete with 60 Hz scan lines and automatic screen flicker.

All of this could have been yours for only \$100 back then, or \$189.60 in 2009 Canadian dollars. However, our reviewer Tom Watts thought that “An IBM 3279 at \$10000+ is ... worth its price more so than this unit”.

aborted

## Dating Advice from the Editor

### Dearest InsideR,

I just wanted to inform you that the yellow tie that you wore last thursday brightened up the entire depressing gray concrete fortress that poses as the MC. I constantly attempt to find time to chat on the local chat room without proper grammar or punctuation so you might consider banning me and hence recognize my existence, but I haven’t had any luck yet. I realize you loathe improper grammar and sentence structures, and I think it is an extremely entertaining quirk of your shining personality. I realize that you are a software engineer and hence don’t acknowledge the existence of girls, but I think you should open up your gorgeous eyes. We are all around you, and as a dashingly handsome and charming *mathNEWS* editor, you could probably have your pick. PS I won’t slap you.

Function 3

### Dear Function 3,

I don’t know what you’re smoking, but I don’t want any.

InsidED

*[And for the record, I’m still trying to figure out who wrote this — InsidED]*

## The Joaquin Phoenix Postulate

### A.K.A. Proof a Charles Darwin Movie is in the making

Premises (Referred to as Pn):

1. Joaquin Pheonix has a huge beard.
2. Joaquin Pheonix was a good actor (Oscar Nominated).
3. Joaquin Pheonix is a bad rapper (Look at youtube video of him falling off stage).
4. Joaquin Pheonix gets a lot of attention. (David Letterman Interview?)
5. It is the 200th anniversary of Charles Darwin’s birthday.
6. Charles Darwin had a huge beard.
7. There are people who have strong beliefs against Charles Darwin.
8. Nobody likes angry violent protesters
9. Joaquin Pheonix would not give up a good thing for a crappy rap career.
10. Joaquin Pheonix is currently rapping.

From this we can get two of Joaquin’s proofs:

#### Proof One:

1. P1 + P2 + P6 -> Joaquin Pheonix is the only actor capable of playing Charles Darwin
2. P7 + P8 -> Nobody wants to disturb angry violent protesters
3. P4 + P3 -> Joaquin Pheonix is starting his “rap career” to distract from something more important.
4. ASSUME Charles Darwin is Awesome.
5. P5 + Step 4 -> A Charles Darwin Movie is in the making.
6. Step 2 + Step 5 -> Nobody can know beforehand about this movie.
7. Step 3 + Step 6 -> Joaquin Pheonix is distracting the world from the progress of this movie.
8. Step 1 + Step 7 -> Joaquin Pheonix will play Charles Darwin

9. P2 -> If Joaquin Pheonix is playing Charles Darwin, he has to be awesome. Thus the assumption in step 4 is correct.

10. Step 5. A Charles Darwin Movie is in the making.

#### Proof Two:

1. P2 + P3 + P9 -> There is no logic for Joaquin to start rapping.
2. Step 1 + P10 -> Bottom.
3. From Bottom we can assume a Charles Darwin Movie is in the making.

So there you have it. “The Evolution of Man” must be in the making. My guess is that it would be in theatres just in time for Christmas (The cold doesn’t bode well for rioters).

Tbor

## Dear Imprint

I’m always on-site and I’m on payroll too. Even if you think that I’m only here when they call for special occasions, you’re wrong. I’m always here because I already have my corner set up and decorated. If you want to find me, you’ll have to call my pimp & pay a base fee, and then your name will be put on a list. If I’m interested, then you’ll get to spend time with me. \*if you know what I mean\*

Sexy Whore

*[Isn’t it sad when our Sexy Whore has better grammar than you? — InsidED]*

## The Unlucky 7

### *Tips to flame someone without looking like an assclown*

Imitation is the best form of flattery. That is, assuming it's done well. Unfortunately, as last week shows, our friends at Imprint don't know how to flame anything larger than a marshmallow.

So that we can hopefully have a *proper* flame war in the future, I am going to give Imprint some tips on how to avoid looking like an idiot (which in itself is a stretch) when trying to insult *mathNEWS* (or anyone else, for that matter).

1. **Set a clear purpose.** Flame-bait must have a clearly-defined purpose, be it to amuse or to anger the receiver. Our flame-bait does the former. Yours... well, we've been trying to figure that out for years.
2. **Don't make your ego look bigger than it actually is.** If you tell us to "Bring it" in sentence  $n$ , and then ask for help in sentence  $n+1$  from a newspaper that knows better (see *mathNEWS* Volume 108 Issue 2), that is only showing your expectation of getting burned.
3. **Don't contradict yourself.** How can you be shocked and appalled by something you agree with? That makes less sense than Shaniqua! And yes, your agreement is on record along with your so-called "shock and appall".
4. **Don't mock your own ideas.** Was it not you who suggested something like a declaration of war when you sabotaged our wonderful cover? We have that on record too.
5. **Do some research.** If your eyes worked, you would see that MC is not made of ivory. You would also realise that *mathNEWS* is not in a tower, but in a hidden corridor on the third floor. Mind you, compared to your hole in the ground, anything looks like a tower to you.
6. **Remember where you stand.** Everyone recognizes that *mathNEWS* is a satirical publication. On the other hand, many people confuse your paper for a legitimate newspaper, and will act accordingly. Perhaps the Iron Warrior's suggestion last summer to print on 8.5x11 paper would clarify your purpose.
7. **Don't hold yourself back.** I haven't seen or heard "Abort! Abort!" since, I don't know..., sixth grade? Either bring it 100% and make it worth my while, or don't bother.

Imprint, I hope that you can use the tips above to improve your assaults against us. While you can insult *mathNEWS* all you want, all I ask is that it be worth reading.

InsideR

P.S. At least we try to make our flame-bait amusing, instead of just WTF material.

P.P.S. Yes, we do keep our Sexy Whore on site. And on payroll. Unfortunately, Imprint staff have to pay double for her services.

## Theorem

### *Someone wants a girlfriend*

You want to see my hard, rigid proof? Are you sure? It's so solid, so flawless that you'll probably end up on your knees begging for me to abbreviate, just leave it as an exercise for you to do when you've recovered. But, since you insist...

First, you start with the base case. Nothing complicated: just a few glances, some smiles and joking over drinks. Just to make sure there's a connection at all. No point in going on if we can tell right away it's not going to work, right?

But then, once we know where we stand, we have to make a few...assumptions. Sure, we could talk and share and spend every day for all eternity learning more about each other, making sure we connect, but that's not how we play the game, is it? There aren't enough sheets of paper, not enough days in all of time to check every compatibility. So we have to assume that it works out, to some extent.

Now comes the fun part. The real work; the adventure. The call of life; the very appetite of all that drives us! We're two equations, looking completely different, but we have to show we're the same. Manipulate each other, look at each other from different ways, be creative! Use every bit of cunning, effort, and dexterity until...it happens. All of a sudden, it all makes sense. The universe comes together in a perfect alignment and we fit together for  $k$ , for  $k+1$ , for  $k+2$ , even! And as  $k$  grows and grows, escalating into the very furthest reaches of infinity, we gasp for air and try only not to be completely overcome by this...truth. Truth beyond any thought, any emotion that could possibly exist. This is what existence is; this is love, life and math.

And as the realization fades, you're left numb in the deepest recesses of your mind. You lie there, panting from everything you've taken in. And your drift gazes to inference.

Euler

## profQUOTES

*As filler*

Stop talking. That's my job.

Terry, SE 382

So many people got these mini laptops now. They're like male purses.

Terry, SE 382

If the [microwave] door is open, we want the heat to be off. That way, we don't cook nearby chefs.

Bishop, ECE 327

[argument against garbage-in-garbage-out] If Homer Simpson's at the controls, you want to protect the nuclear reactor.

Bishop, ECE 327

$10^{26}$  computers is a lot of computers.

Bishop, ECE 327

Good to see that I've made the profQUOTES. Now I'm officially hilarious.

Wagner, Math 249

Yeah, you keep thinking that.

InsidED, MC 3046

## Dead Like Me

### *Death after death*

For those of you unaware, the *Dead Like Me* movie, entitled *Life After Death*, was released about a fortnight ago and was to pick up where the story left off except two years down the road. Fans of the series will notice two major changes from the TV to the film. The first being suck and the second being a noticeable lack of anything interesting.

Under new direction by Stephen Herek (who can be noted for such atrocities as *Young MacGyver*), this movie takes the blend of poignant depth and starkly fluffy humour which was a staple in the TV series, throws it out the window and replaces it with a juvenile substitute commonly referred to as shit. The gang of Grim Reapers (people who take people's souls from their bodies before death) finds their precious Der Waffle Haus burnt to the ground, their leader Rube moved on and are suddenly introduced to a new leader named Cameron Sugar Daddy. Cameron has a plethora of wealth and doesn't seem to care about taking care of his business as a Grim Reaper. Everyone except the sardonically witty and hilariously vulgar protagonist, Georgia Lass, gets taken in by the appeal of the level of sleaze that Cameron brings with him.

The plot is pretty much the main crew discovering that they need to take their jobs seriously and can't take shortcuts for their own benefit. Which would be driving if it didn't already happen earlier in the show. It also would have been okay if it wasn't so badly done. There's one particularly painful scene where a Grim Reaper who was an actress doesn't know her lines and starts singing nursery rhymes during a Shakespeare production. The only good parts in the movie were the ones which focused on Georgia Lass and her survivors; her mother and sister. Things get interesting when her sister discovers that Georgia is still around, but that plot isn't the focus so much as something to look forward to until the end. The end could not have been less sensical or stupid and, without spoiling anything, it involves Georgia looking at the sky, spinning on the spot with her arms outstretched and a psychotic look on her face while it rains blank Post-its from the sky. I normally would pay more for my drug trips and get a bigger bang for my buck from them than seeing it rain Post-its, but I'm a student and can't afford the good stuff.

If you're a fan of the series then don't watch the movie. All you gain from it is a feeling that something you've loved has been dumbed down, robbed of all of its uniqueness and left to play out like an episode of *Jerry Springer* where all of the characters are so pathetically stupid that you lament the fact that they don't stay dead. If you haven't seen the show then watch it and don't see the movie. Any way you look at it, watching the movie isn't the best way to spend your time. Especially when there's more mentally stimulating things to do out there like peeing on an electric fence or removing your nipples with a lawnmower.

Angelo

## Cyber Equivalents

Douglas Coupland once mentioned a "metaphor-backwards" method of developing software, involving "thinking of a real-world object with no cyber equivalent, and then figuring out what that cyber equivalent should be." This is harder than it seems, since almost every noun I could think of has some technological association already, but here are a few I did manage to come up with:

(All definitions from dictionary.com)

**Term:** flea collar

**Current definition:** A dog or cat collar impregnated with a chemical for repelling or killing fleas.

**Cyber equivalent:** A piece of software installed on fora to kill troll posts.

**Example usage:** "Don't go messing around on the CSXXX newsgroup — they've got a pretty tight flea collar!"

**Term:** lampshade

**Current definition:** A shade, usually translucent or opaque, for shielding the glare of a light source in a lamp or for directing the light to a particular area.

**Cyber equivalent:** The technique of directing attention towards a particular feature, and away from undesirable aspects of one's program.

**Example usage:** "He's totally lampshading his code so no one will see what a mess it is."

**Term:** spatula

**Current definition:** An implement with a broad, flat, usually flexible blade, used for blending foods or removing them from cooking utensils, mixing drugs, spreading plasters and paints, etc.

**Cyber equivalent:** A program allowing users to uninstall applications from Macintosh computers without having to hunt madly for leftover files. It scrapes the system clean of any residual program files with minimal exertion on the part of the user.

**Example usage:** "Man, you should really get a spatula on this machine and get rid of all this junk."

**Term:** fortune cookie

**Current definition:** A thin folded wafer containing a prediction or maxim printed on a slip of paper; often served as a dessert in Chinese restaurants. Cyber equivalent: A file containing useless and grammatically incorrect information, often used by the Chinese government to track users who attempt to access "inappropriate" sites.

**Example usage:** "Oh no, they slapped you with a fortune cookie! Were you trying to load slashdot again?"

(Interesting trivia: the term cookie *did* originally come from fortune cookies, because of the fact that they are small packages containing hidden information.)

## Google Proverbs

*Today's Search: "when life gives you" -lemons*

- When life gives you pigs with lipstick, make sexy bacon.
- When life gives you Dennis Rodman, cast a bunch of little people and make a basketball movie.

- When life gives you melons, spellchecker can't help you.
- When life gives you a snow day, take it.

kBa

InsidED

## Realizations of a Mathie:

Once you become a student at the University of Waterloo and take up the honour of being a Mathie you realize:

1. That the world becomes a much uglier place. Pretty blue eyed blonds are simply an urban legend. However, the world becomes so much nicer, and peaceful place, you can relate and talk to everyone.
2. You realize that the smartest person from your high school now seems really dumb. However, the not so smart people have no chance whatsoever.
3. You realize that high school teachers actually care about you, or at least try to, and now you really appreciate them. However, you realize that university profs don't give a jack shit about you.
4. You should have really appreciated the small things in life before university, like "self cleaning" shirts, "self changing" bed sheet, and homemade meals. However, now it's too late, you got to do your own laundries, change your own sheets, and eat cafeteria shit or your own cooked shit. Also that your mother's pot pie seems like a delicacy rather than something you would avoid.
5. You realize that no one else gives a shit about being cool, or being in the "cool" gang. However, being nerdy is normal, and widely accepted by everyone. And grades/coop jobs are better than someone's boyfriend's Porsche.
6. You realize that talking to yourself has become much more interesting, it's like you are talking to a smart person. However, you catch yourself singing "the bus goes round and round" for hours nonstop.
7. You realize that calculators are evil, now you can't use them on tests, you will have to be careful with your additions. However, you can now do advanced multivariable integration calculus in your sleep, while dreaming on the toilet in space backwards and tied upside down. [I dare you try to figure out that image]

8. You realize that TV is not a desire, rather a distraction. However, without a TV, chat rooms become your best friend.
9. You realize that having a credit card, driver's license or anything else doesn't matter, because all you need is your university ID. However, you tried to pay for a bottle of water at the airport with your ID card and trying to get into a public library with your ID card.
10. You realize that time and sleep doesn't work so well; you will have to do both things everywhere. For instance, you are crunching LDEs while on the loo, or taking a nap, which don't usually work so well. However, you will master the use of caffeine, that you can stay awake for hours and hours and hours and hours and hours.
11. You realize that the money you spend in a weekend while in high school for that video game or that shoes wouldn't even cover a text book full of weird Greek symbols. However, you realized that shoes and video games can only take you so far, while weird Greek symbols can make you lots of money.
12. Skipping and not get caught was an honor. However, not so anymore.
13. Realize that university of Waterloo is as hard as hell, and you wonder why the fuck you came to this place in the first place. However, now it's too late to go back, as number theories are much more interesting when discussed with a similar intelligent being.
14. Realize how lucky you should feel as there are tons of people who want to go to university but can't. However...

*[After investigating why this article suddenly had a series of random characters at the end of it, it was determined that Bill suddenly fell asleep, banging his head on the keyboard.—InsidED]*

Bill Li

### Midterm Ramblings - CS 136



### \$25 Gift Certificate

*For another star writer!*

Another issue, another \$25 HMV Gift Certificate to give away. This is my way of improving Production Night productivity: reward the person with the best article and beat the rest.

This week's winner is Bill Li. There are many things about being a university student that you just don't realize when you're in high school, and I know some people who could use a refresher like this one. Hopefully, some prospective mathies will read this while you pick up your prize from the MathSoc office.

InsidED



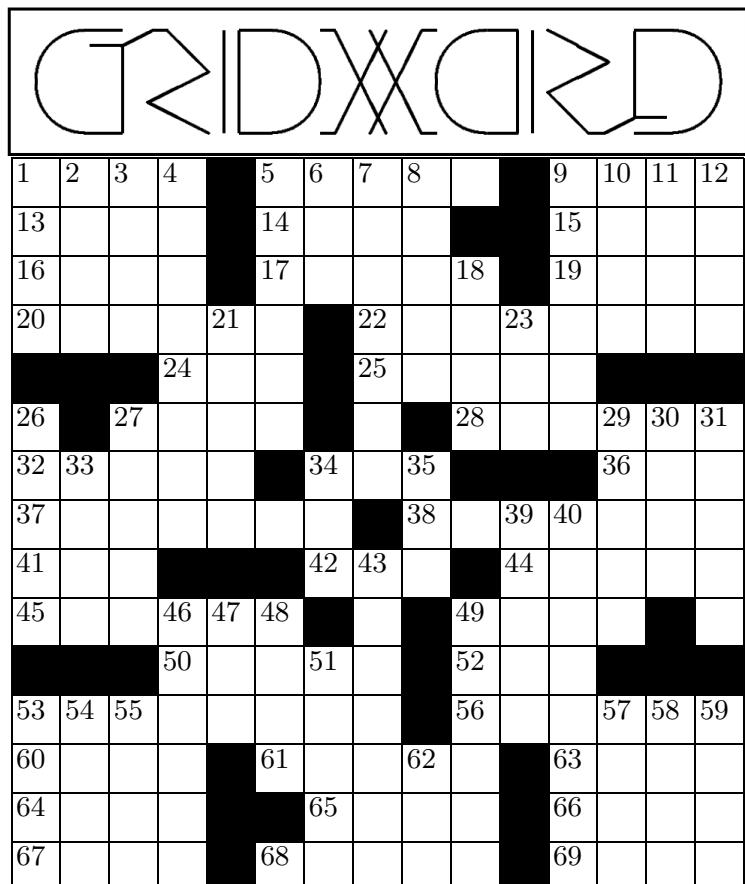
**gridCOMMENTS***Re-living the past*

Yay! We've gotten some submissions for my Valentine's *gridWORD*, and they were all kind of weak reasons... This week's winner is.... I have no idea what your name is, but your student ID is kwtseng [*A quick WatIAM search is yielding "Katherine Wan-Lin Tseng" — InsidED!*] Just drop by Mathsoc at any time when we are open to claim your C&D gift certificate!

This week is me being really lazy (Notice the no MathCooks?) so it's an ancient *gridWORD* from way back when dinosaurs roamed the earth! (Or, something like that, 1975?) Remember to answer the *gridQUESTION* and submit your solutions to Mathsoc by Monday March 16 at 6pm!

This week's *gridQUESTION*: How are you dealing with the stress of my unborn child?

Have fun with this!  
Really Lazy Panda

**UWDir replaced with WatIAM**

*Former mathNEWS editor behind the change*

Last month, the UW Directory, a system once used to store staff and student contact information, was taken offline. Put in its place was a new system, known as the Waterloo Identity and Access Management system, or WatIAM for short.

While there is no considerable change in the interface, many here at *mathNEWS* are curious about the origins of the new name. Currently, we are investigating the possibility that an old editor, known once as "mossED", has returned from the dead to unleash another one of his horrible puns upon campus.

*mathNEWS* will update this story as such updates become available.

This *gridWORD* was originally published in *mathNEWS* Volume 8, Issue 4, June 20, 1975.

*Across*

1. Complain
5. Extremely thirsty
9. End of John 3:4 (rsv)
13. Laze About
14. Territory
15. Foil
16. One extinct bird
17. A plot of land (latin)
19. Rodents
20. A simple song
22. Cripples
24. 10 decibels
25. Chilled e
27. Diminutive
28. Bodies
32. Vales
34. Earlier than now
36. Mouths
37. Full of ginger
38. To the side
41. The singular of "eros"
42. Fish
44. To lift up
45. Chancing
49. Generally regarded as safe
50. Lash out
52. An appendage
53. An excellent program
56. Stylish
60. Opposite the editorials
61. Fetch back
63. Turkish money
64. Islet
65. Kin -suffix
66. Issue
67. Average
68. Exhausted
69. Healthy

*Down*

1. A bird's toe
2. Rome (latin)
3. Zut \_\_\_\_s
4. Practling
5. Wisely
6. Over regulatory legislation
7. Transferring
8. Of rabies
9. A Caucasoid African
10. Jewel
11. Nerve network
12. A Scottish lake
18. One group
21. Curved glass
23. Fuss
26. Goaded
27. The usual manner
29. "Soars" -deranged
30. By mouth
31. Earthy
33. Italian money
34. At your command
35. Aged
39. Earth
40. Lessons
43. Remote chance
46. A footnote
47. No longer available
48. Clothing
49. Device
51. Peel
53. Fish fork
54. \_\_\_\_ facto
55. Almost near
57. A type of cotton
58. Ireland
59. Grade
62. Not a noun

**Solution to Previous *gridWORD***