

math

NEWS

Volume 128, Issue 3

Friday, June 12th, 2015



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lookAHEAD**mathNEWS**

June 12	Issue 3 cannot be used on exams.
June 22	Issue 4 cannot be eaten during exams.
June 26	Issue 4 cannot be drunk during exams.

University

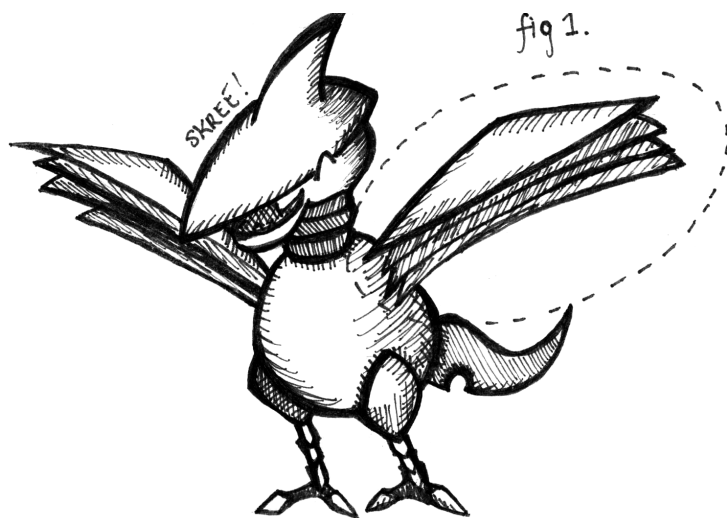
June 8–29	Adjust online course exam location
June 9–13	Spring 2015 Convocation
June 19	Deadline for 50% tuition refund

Miscellaneous

June 21	Summer Solstice / June Solstice
June 21	Father's Day
June 25	National Catfish Day

[One of these things is not like the others. Can you guess which?]

*You're right! It's **Summer Solstice!** It has never been recognized by Presidential Proclamation as a national observance for the United States of America! Well done!—ConvolutED]*

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Thomas Baxter (Canon F-500), Amy Li (Casio fx-82 PLUS), Elizabeth Liu (SHARP EL-501X), Julie Sturgeon (TI 30X II S), Katherine Tu (good ol' fashioned abacus)

mastHEAD

The Spring 2015 exam schedule was released this past Monday (protip: you should check this is!). As usual, an email was sent to students to inform them of the release, but this email included another message. Students are now prohibited from consuming food or drinks during their final examinations. The exception is water (though it must be in a clear bottle with no label). However, students can arrange to take "nutrition breaks" (what is this, kindergarden?) with a Proctor outside the exam room if needed.

The reactions from this decision have been mixed, from what I have heard. Those with allergies are elated, since most people consuming in close quarters during an exam aren't really giving a crap about their fellow human beings anyway. Others are against the policy, because, as one *mathNEWS* writer put it "What right does the University have to tell me when I can and cannot eat? I want the right to a full turkey dinner on demand! It's a free country dammit!". I have heard through the grapevine that this decision was primarily caused by someone eating a bowl of ramen during an exam. Really, guy? Some people make very strange exam food choices. We asked our writers, "What is your favorite snack during an exam?"

himynameis ("illegal calculators"); wibbled ("Doritos - noisiest food ever"); dictatED ("Durian"); darshwanda ("pop rocks"); Zethar ("The souls of others. One must balance the suffering therein, after all"); Beyond Meta ("Edible abacus; screw the calculator policy"); Sir Not-Appearing-In-This-Issue ("My name is Algoweird!"); (define this (not a_student)) ("The condemnation of passing proctors as I crunch on delicious crackers"); TotallyLegitDeveloper ("Whatever food has the loudest wrapper"); ConvolutED ("My closest neighbour's exam paper"); RT_STUDENT ("Exam? Mine is take-home! PIZZA!!!"); sharpie ("Ramen"); Theodore Bear ("Salmon"); IceNine ("The tears of other students"); MizzPrezzieDee ("My growling stomach, nothing beats that noise!"); Scythe Marshall ("The formula sheet; I don't need it, and neither do the markers, right?")

GingerbrED ("Allergens—nothing but allergens").

Article(s) of the Issue(s)

In our desperate search for filler last issue, we somehow neglected to include one of the easiest filler articles of all: our choice for Article of the Issue. As a short article that can take anywhere from a single paragraph to a half-column, depending on how verbose the editor writing it is, it makes some perfect filler in those tricky spaces that are too tall for LARGE BOLD MATH JOKES, but too small for legitimate content. In order to rectify this grave mistake from last issue [*and fill up more space in this one—ConvolutED*] we are going to announce both winners here.

The winner of last issue is "CSIS Announces New Online Dating Service" by theSMURF, and this issue's is "Finding a Match" by Beyond Meta. Pick up your prizes from *mathNEWS!*

The Editors

Prez Sez

Hey everyone, a few quick things:

- The date for the GM has been decided; it will be Thursday, July 23rd, the day after Pi Misapproximation Day. (I believe that this is the start of actually having some "sufficient notice" for a change.)
- I'm still working on figuring out all the details of the calculator policy; more info is soon to come.
- There are still a bunch of council seats available and elections are happening soon. Stay tuned for more details.

MizzPrezzieDee

[title of show]

Starting this week and continuing for the next three weeks, KWLT will be putting on a production of *[title of show]* which is a musical about two guys writing a musical about two guys writing a musical.

The show starts at 8 PM on June 11–13, 18–20, and 27–29. Tickets are \$15 dollars for non-members and \$10 for members or groups of six or more people. Highlights of the show include a song about killing vampires and three-quarters of the cast taking their shirt off. It features *mathNEWS* writer Shay Blair, which if you know them, you probably knew that anyways.

I personally give this show 5 walls out of 4.

Beyond Meta

N Reasons I'm Not Attending My Convocation

- Finding an hotel room for my out-of-town family was too hard.
- They decoupled Math and Arts convocations, and since all of my friends are in Math, I won't know anyone else there.
- This weekend is forecast to be incredibly warm, and that will make sitting in the PAC an uncomfortable experience.
- There is a very good chance that my degree won't be terribly relevant to my professional career, which takes some of the allure out of the event.
- Everything is so expensive.
- All of the gowns available for rental did not fit well, and going with a private gown was a huge hassle.
- My friend in Math asked me to join her to watch her convocation, so I'm just going to go to that one.
- I just don't care enough.

(define this (not a_student))

VPA Sez

CALCULATOR POLICY:

The Calculator Policy is slated to be changed for Fall 2015, at which time the only approvable calculator will be TI 30XIIIs sold (and pre-approved) on-campus. You can find the policy at <https://uwaterloo.ca/math/current-undergraduates/regulations-and-procedures/calculator-regulation>.

If you have any opinion on the matter, please fill out the Math-Soc-run survey at <http://goo.gl/forms/AwVj9hhrzy>.

MAV/CAV DISCUSSION GROUP:

The MAV/CAV subcommittee met on June 9th. The General Math degree 60% CAV requirement will be reinstated. We discussed changes that should be made to the Math Studies degree; as it stands, many students are transferred into the Math Studies program for not meeting the requirements in other programs. However, Math Studies still has a 60% average requirement (the same as most other programs), so as soon as students are in the program, they are at risk of failing out. The most popular suggestion was to have a Math Studies-specific average requirement that does not include certain grades, such as failing grades or grades under 60%.

This was inspired by Applied Health Studies' policy, in which students at risk of leaving the program are given a non-degree term to meet requirements. If they are successful, they have the option of clearing all previous grades below 60%, allowing them to clear average-requirement deficits.

MENTAL HEALTH SERIES WITH DAN WOLCZUK:

Myself, Dan Wolczuk, and representatives of the Student Success Office and Counselling Services met on June 4th to discuss our mental health campaign. We may be having a pilot talk by Dan Wolczuk this semester.

CO-OP STUDENT COUNCIL (CSC):

The CSC met on May 27th and was given a talk on WaterlooWorks and statistics for Spring 2015.

The WaterlooWorks project has been reset; the last time we heard from them, it had issues with scalability. The project is now being outsourced to a company that has already made many products similar to WaterlooWorks, so it should no longer be a problem. The WaterlooWorks team promises better search functionality, 24/7 availability, and an option to not rank an employer, which are improvements on JobMine. No expected release date was given, but you can find out more at www.facebook.com/waterlooworks.student.panel.

There were seven Undergraduate Research Internships (URIs) given to mathematics students for Winter 2015, about a tenth the number of science URIs or engineering URIs. If you are interested in research, you are encouraged to apply for one. As of mid-May, 89% of co-op students were employed.

Katherine Tu
Vice President, Academic

Stuff to Do This Summer

As if summer wasn't busy enough...

Spring 2015 is a busy term for GingerbrED. I am behind in my courses but trying really, really hard to graduate this term, so I am taking twice the courses I normally take. In addition to that, I am juggling three jobs so that I can have sufficient funds to take a badass trip to Japan after graduation. But, despite all this, I want to attend one million and two events to attend over the next couple of months, because IT'S SUMMER, BITCHES! This is when all the cool stuff happens! If you're not in the know, here is a rundown of some cool shit that's happening in KW and Toronto this summer:

Plays in Kitchener: It seems like the summer is a very active time of year for theatre dweebs. The sun is shining, and they are... hiding in the theatre. No matter! The aptly named [*title of show*] [*No, that's not a typo. Oh gods, I just made this even more confusing, didn't I?—ConvolutED*] is playing at KWLTL in Uptown Waterloo from June 11th to the 27th. My friend Matt (one of the co-stars) has told me that this show will be hilarious, and he spends more time with his shirt off than on during the course of the show (ladies). Also, if you're interested in being in a show in the fall, auditions for *Who's Afraid of Virginia Woolf?* start on the 22nd. You can find more information and get tickets at kwltd.org. In July, a series of One Act plays will be performed from July 16–18, and 23–25.

Nuit Blanche (June 13): if you need something to do this weekend, Nuit Blanche is happening in London tomorrow! This free event is taking place at the Museum London. Nuit Blanche is a funky mix of artistic awesome. The full list of artists and performers is at museumlondon.ca/events:630.

Summer Lights Festival (June 20): I have no idea what this event is, I was just invited to it on Facebook. The website (www.summerlightsfestival.com) says "Join us for a night of exploration and discovery in Downtown Kitchener". That sounds neat, and I assume it will be free. Wheeee.

Toronto Pride (June 26–28): Holy crap. Holy crap holy crap holy crap. Pride is going to be AMAZING. I'm kicking off the weekend with a rave on a boat called Pride and Bass arranged by my lovely friend Michelle (you can get tickets through TicketScene). Saturday of Pride, I'll be heading to the Crush TO Pride

Party at the Steady hosted by I'd Tap That (www.id-tap-that.com). This would be a good party to attend if you're looking for a Pride-themed party OFF of Church St. Finally, on Sunday is the Pride Parade. Feds and the GLOW Centre are organizing a bus that will take you to Toronto if you want to march with UW in the parade. After the parade, in Yonge and Dundas Square is a free concert featuring Lights and Pussy Riot. Oh my goodness, this weekend will be hectic and awesome!

Kitchener Ribfest (July 17–19): Do you like ribs? Check! Do you like beer? Also check. I'll admit, I'm more in it for the beer than the ribs. A bunch of regional breweries (including quite a few from around KW) will allow you to sample their beers at \$1 for 4 ounces. I've gone every year that I've lived in Waterloo, and I have collected glasses from each of these years. My friend is making me a paddle so that I can carry multiple four-ounce glasses at once. Also, bloomin' onions. If you don't know what those are, you have to try one.

Atomic Lollipop (July 17–19): I haven't ever been to this event nor know anyone who has gone before, but it looks awesome. On atomiclollipop.com, it describes itself as a "geek festival... with fire, strippers, freaks and geeks!" That sounds like my kind of fun. I was initially attracted by the fact that Prozzak is playing (!), but I'm also looking forward to the Ramen Eating Contest, Kigurumi Fight Club, and Cosplay Dodgeball. Also, it's at the Ontario Science Centre. ZOMG.

Wayhome Fest (July 24–26): I like to call this event "the coolest music festival nobody's ever heard of". It's in Oro Medonte, which is slightly north of Barrie (read: super close!). I was initially attracted by the fact that Hozier (a hard man to track down) is playing there. Other big-name acts include Neil Young, Sam Smith, Bassnectar, The Decemberists, Vance Joy... it just goes on. Tickets for the whole weekend include on-site camping, and are reasonably priced compared to music festivals of the same size and scope.

Oh my goodness, this is so much stuff. If you'll excuse me, I have to crawl into my basement to do homework....

GingerbrED

I Don't Need Therapy

Anyone who knows me knows that I tend to write rants when I am upset at the world. They also know that I write way too many *mathNEWS* articles. I would like to say that I am fine. I don't need any help. This article is not in any way, shape, or form a cry for help. My recent surge of writing is definitely not due to extreme stress from having three midterms and an assignment this week while being sick.

I will now go curl up in a ball.

Beyond Meta

I Want Pizza

I go to glorious country of *mathNEWS*, with no food in stomach and no sleep in schedule. I am promised much pizza and happiness. Instead, facist *mathNEWS* "editors" tell me not allowed.

mathNEWS is not free newspaper I was promised. I go back to Imprint, is better than here. [*We do not judge anyone by their face, Sir, and we deny the claim that Imprint is "better" than mathNEWS.—ConvolutED*]

Sir Not-Appearing-In-This-Issue

Math Behind Isometric Games

Prerequisites: MATH 136

We've all been there before: we go to make a Diablo clone and realize that we don't know how to draw isometric graphics to the screen. Fear not! I have the mathematical methods to make this possible! I shall divulge my ancient secrets (common knowledge, really) upon you!

...and because the editors are complaining about LaTeX I'll be expressing things using the MATLAB syntax. You'll need to learn it for CS 370 anyway, so better start early!

We're all used to the standard basis, the identity matrix:

$$I = \begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$$

In order to get our required results, we need to use a different basis, the isometric basis:

$$A = \begin{bmatrix} 2 & -2 \\ 1 & 1 \end{bmatrix}$$

This was derived from inspection. We need two vectors to form our new axis lines. If we look at Diablo, we notice that tileset images are twice the width than height. And BAM! We get this awesome basis. Proving that A satisfies the definition of basis is left as an exercise to the reader (read: I'm too lazy to reproduce it here).

If we use images the size of 32 px by 16 px, for any useful results we need the top row to be half our image width and the bottom row to be half the image height. This was gotten through trial and error. Thus we get:

$$A = \begin{bmatrix} 16 & -16 \\ 8 & 8 \end{bmatrix}$$

We can use our new basis A to draw an array to the screen, effectively translating from world coordinates in the standard basis I into the isometric basis A. We can apply the definition of the change of coordinates matrix presented on page 132 of *References to Linear Algebra: Course Notes Edition 2.0* by Wolczuk to this end.

However, computers don't typically like multiplying a matrix by a vector (at least x86 processors don't include an instruction to do that) so we need to turn this into a function.

$$\begin{aligned} v &= \begin{bmatrix} x \\ y \end{bmatrix} \\ A*v &= \begin{bmatrix} 16*x - 16*y \\ 8*x + 8*y \end{bmatrix} \end{aligned}$$

This can translate into the following C function:

```
void levelToScreen( int x, int y,
                  int *outX, int *outY )
{ *outX = 16*x - 16*y; *outY = 8*x + 8*y; }
```

But wait! I hear you say. How do I select things from the level? I'm glad you asked! Well, we can totally do that! Just invert A (call this brave new matrix B). Is A invertible?

```
>> det(A)
ans = 256
```

Sick! It is. So the inverse is:

```
>> B = inv(A)
B =
    0.03125    0.0625
   -0.03125    0.0625
```

By argument above we get the following mapping from screen to level:

```
void screenToLevel( int x, int y,
                  int *outX, int *outY )
{ *outX = 0.03125*x + 0.0625*y;
  *outY = 0.0625*y - 0.03125*x; }
```

This works wonders if we store our level data in a 2D array of tiles. Thus we can use the following SDL code to render an isometric square assuming tile.png is a 32x16 tile.

```
// file: iso.c
// compile with cc sdl.c `sdl-config --cflags
--libs` -std=gnu99
#include <SDL/SDL.h>
#include <stdio.h>

static void levelToScreen(int x, int y,
                        int *outX, int *outY)
{ *outX = 16*x - 16*y; *outY = 8*x + 8*y; }

int main( int argc, char ** argv )
{
    SDL_Init( SDL_INIT_EVERYTHING );
    SDL_Surface *screen = SDL_SetVideoMode(640,
480, 0, 0);
    SDL_Surface *tile = SDL_LoadBMP("tile.
bmp");

    for (int y = 0; y < 10; y++) {
        for (int x = 0; x < 10; x++) {
            SDL_Rect srcrect = {0, 0, 32, 16};
            SDL_Rect dstrect = {0, 0, 32, 16};
            levelToScreen(x, y, &dstrect.x,
&dstrect.y);
            SDL_BlitSurface(tile, &srcrect, screen,
&dstrect);
        }
    }
    SDL_Flip(screen);
    SDL_Delay(3000);
    SDL_FreeSurface(tile);
    SDL_Quit();
    return 0;
}
```

Mythical Students

Of all the legends passed down within the university, few are repeated as often as those about strange groups of students. In the math department, the most repeated are the stories of the Real Time Students.

But both you and I have heard those tales. I am in search of other tales about other groups.

I have heard tell of the "Graphics" Students who study an art as mysterious as that of Real Time. Few tales exist of them and their battles of colours, depth, and buffers. But they are real, and I have seen their sanctum. It is cleverly hidden, and you can walk by it without ever noticing, but occasionally a glimpse of colour will appear at the edge of your vision. If you follow those flashes of colour, you might be able to find it too.

And there are yet more untold tales. I have heard a mere whisper of yet another group, not even enough to confirm their existence. That whisper is a single word: "Compilers".

If you have any information, be it factual or mere rumour, please report it to *mathNEWS* so that it may be shared amongst us, and we may learn more of these mythical students.



Glec

We received a **BLACK BOX** submitted article for this issue! At the very least, we received a piece of paper with "DEEZ NUTS" written on it. Thank you, contributor!

Updated Pencil Policy

In 2010, *mathNEWS* broke the news of the new Pink Tie Pencil Policy (*mathNEWS* v114 i1, see next page). This week, the Faculty of Mathematics has announced an update to that policy. In order to ensure all students have equal access to pencils, effective Fall 2015, the Faculty will be restricting the pencils allowed in Math exams down to a single one: the Dixon Ticonderoga 13882 HB2. This pencil was chosen because it is approved for use in the Society of Actuaries exam.

Orientation kits will include this pencil with a pink tie sticker already on them. If you won't be attending orientation because you are already a student here, or you are dumb enough to lose or break your pencil during your four years here, you may purchase a replacement pencil at one of our on-campus stores. If you wish to purchase a 13882 HB2 somewhere other than on campus, it will not have a pink tie sticker on it and will not be allowed. It's simply not reasonable to expect exam proctors to be able to identify the one and only pencil allowed on exams if it doesn't have a pink tie sticker on it.

We've compiled a short FAQ below.

Q: I already own a Dixon 13882 HB2 pencil. Can I have a pink tie sticker attached to it?

A: The Mathematics Undergraduate Office (MC 4022) has a very limited number of pink tie stickers which we will affix to existing 13882 HB2 pencils. Note that once our supply is exhausted, we will not be giving out any more.

Q: Why don't you just order more pink tie stickers?

A: If we allowed students to purchase their Dixon 13882 HB2 pencils from off campus locations, it would interfere with our plan to charge exorbitant prices for these pencils once we are the sole supplier.

Q: You used to allow certain pencils from Bic and Paper Mate. Why the change?

A: By partnering with Dixon Ticonderoga to make the 13882 HB2 the sole acceptable pencil on campus, the University of Waterloo hopes to bring even greater opportunity to both our teaching and research facilities. By which we mean, Dixon probably just gave us a lot of money under the table.

Dusk Eagle



Pencil Policy

Reprinted from Volume 114, Issue 1

As part of our ongoing commitment to ensuring academic integrity, the University of Waterloo Math Faculty is announcing its new Pencil Policy. As of this term, all tests, midterms, and finals must be written using a pencil approved by the Faculty. Through this policy, it can be assured that no cheating occurs through the use of non-approved pencils and that all students will have equal access to pencils throughout the term. The approved pencils are:

1. Dixon Ticonderoga 13882 HB2
2. Bic Criterium 2613 6B
3. Paper Mate Sharpwriter PAP30301 #2

Where can I pick up one of these approved pencils?

Approved pencils can be picked up from the MathSoc office at the modest cost of \$3 each. All pencils will come with an annoying sticker on them to show that they are approved by the Math faculty for use on all tests and exams. **DO NOT REMOVE THIS STICKER!** An exam proctor may forbid you from using any pencil without a seal of approval sticker on it.

I already have one of these pencils, can I use it?

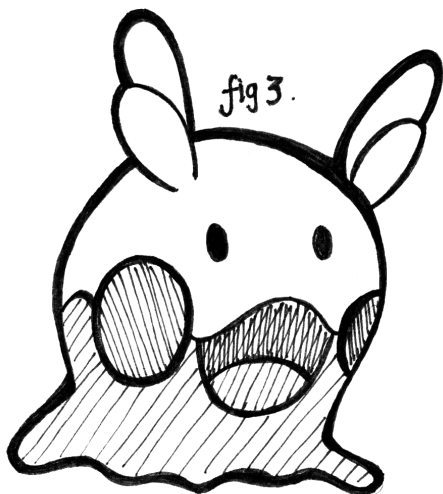
The Faculty of Math has made every attempt to ensure that our pencil choices are so obscure and limited that you will be forced to buy them from us. However, in the rare case that you already have an approved pencil, a sticker of approval can be picked up from the MathSoc office.

I have a pencil very similar to one in the list above, may I use it?

The Faculty has specifically crafted the list above to ensure academic integrity during all tests and exams. As such, all pencils not on the list that you wish to have approved must be dropped off for one full week of inspection at the MathSoc office. Also, don't you dare think of taking the sticker off of an approved pencil and sticking it on your own! Seriously, what harm could a pencil do? Who knows!? That's why we must carefully check over them before they are approved.

I'm a first-year student and I think this policy is way too stringent.

Oh, just you wait until you see our dropboxes!



Faculty of Mathematics Drops New Chair Policy on Unsuspecting Students

The Faculty of Mathematics has sent out a new cyclical, "On the usage of chairs." Within, a new policy diktat has been announced: "All chairs within the buildings controlled by the faculty must be engraved with outlines of the pink tie. All non-compliant chairs have been removed and will be replaced with compliant versions." The new chairs have not yet arrived. When questioned about the status of the new chair, the faculty representative Otto Morphism replied, "They will be replaced soon. Plant Operations has an order in and will respond in due time, probably within six months. Probably."

Furthermore, it has been noted that during exam season, the Faculty takes control of the building where the exam is taking place. All students will be required to provide their own chairs, which can be purchased from Plant Ops in the bowels of GSC. This is not referring to Pokémon's second generation.

IceNine

Union of Waterloo Departments Announces Superior Calculator

Our glorious leader has declared to the masses of UWaterloo that there is only one true calculator, and it is the TI 30X II B (and its twin the TI 30X II S). This calculator will replace all the inferior ones that citizens have erroneously chosen to use in exams, and dissidents will be gathered and expelled for 'cheating' on exams with non-programmable calculators that were acceptable for the previous many years. Do not question the change and do not speak with staff about reversing this new policy. Our union of students to be strong, and we must pay up to use calculators that only a few students have found to be acceptable.

Praise Glorious Leader, Question Nothing,
Soviet Canadian

mathNEWS Writer Enters Hiding

Threats of violence force action

This past production night, prolific *mathNEWS* writer Beyond Meta was nowhere to be found. They had gone into hiding after several pundits threatened them with violence. After they made a bad joke, these punks tried to punish and expunge the writers' joking habits by a phenomenon best described as a punch. These actions were positively pungent.

Despite this negative response, Beyond Meta felt no compunctions for paronomasiac tendencies. "The world is far too serious of a place. I will be ready for any opportunity to lighten things up." They punctuated their statement with the following comment, "After all, a good pun is its own reward."

Beyond Meta

Knitting and Programming?

So I'm a knitter, and no, I'm not a 70-year-old woman. Knitting for me is super relaxing and rewarding. You are making useable and wearable items with your hands! *With your own hands!* So I was on reddit.com/r/knitting and someone mentioned how knitting and programming are very similar. OK, hear me out. There are two types of stitches that you can do: knits and purls; this is similar to binary, 0s and 1s. And if you've ever seen a knitting pattern, they are very similar to little bits of code. Knit for rows 1-50? Sounds like a loop to me! There were many other similarities, and they can be found with a very simple "knitting and programming" Google search.

So, in celebration of my two loves coming together, I am going to start writing a new pseudocode knitting pattern every issue. We will start with a very simple garter stitch scarf! Garter stitch is when you knit every single row, and you get this lovely wavy pattern.

Don't know how to knit? Come to the knitting club Monday nights 6 PM–8 PM in ML 212. (See UW Knitting Club on Facebook.)

Worried about missing *mathNEWS*? You can always leave knitting club slightly early on *mathNEWS* nights. That's what I do! So, no excuses, come out to knitting club! I'll be there!

OK, onto the knitting pattern!

Garter Stitch Scarf

```
needleSize = 4.5; // measured in mm
yarnWeight = worstedWeight
// "it's the worsted" - Matthew Thomason

length = 0;

castOn(40);

while (length < yourHeight) {
  // a good scarf length is your own height
  knit(40);
}

castOff(40);
```

TubesJr.

P.S. More Monty Python in Python will happen next issue, I promise!

Submit your articles, *prof*QUOTES, broken dreams, and last shreds of faith in humanity to mathnews@gmail.com or the BLACK BOX near the MC Comfy Lounge.

New Music Roundup

Lots of great new music came out in the last two weeks, so I'm sticking with the same theme. I've also put the tracks in a playlist, which you can find by searching *mathNEWS* on Spotify.

1. L\$D - *A\$AP Rocky*

I typically don't like A\$AP Rocky, but I typically do like heady, faded songs about drugs. So I guess they balance out. Since I'm biased towards Seattle Rap, I'd also recommend Paradise by Ryan Caraveo and Goodbye My Love by Fresh Espresso. But L\$D is good also.

2. Scud Books - *Hudson Mohawke*

There's no denying that Scud Books is a good track, but it can be kind of intimidating to fit into your day. Maybe when I start running again I'll have time to appreciate its intensity.

3. We Won't - *Jaymes Young and Phoebe Ryan*

Jaymes Young's top song on Spotify samples Sufjan Stevens, but obviously I like him, but the reason this song makes the list is because of Phoebe Ryan. Phoebe Ryan sounds like an American Ellie Goulding, and if you haven't heard her cover mashup of Ignition / Do You... then you should just go listen to that now.

4. How Hard I Try - *filous and James Hersey*

How Hard I Try sounds a bit like Gotye's Somebody That I Used To Know, but electropop. The electropop makes it less interesting, but brighter, which I appreciate.

5. Bad Girls - *MKTO*

MKTO isn't exactly indie (you probably know them from Classic or American Dream), but I don't care. Bad Girls is instantly catchy. And it has the line: "She like getting naked and swimming in pools. // She make it look sexy to break all the rules."

[flustered]

Letters to *mathNEWS*: Volume 97

Dear *mathNEWS* editors,

I am writing to inquire why my application to *mathNEWS* editorship was exchanged for a writing position at Imprint. It has been my dream for many years now to be an editor for your prestigious publication, and I have striven to be the best editor I could be in pursuit of this goal. I received 105% in Grade 12 Propaganda and my teacher has repeatedly assured me that should she ever pursue a career as a dictator she will look back to my project as inspiration. It has also come to my attention that other applicants with significantly fewer articles in their high school newspaper have been promised future editorships, or at least writing positions, whereas I have not. I hereby demand that my application be immediately reconsidered due to this clear error in your decision process.

I assure you that if you accept me as an editor, you will not be making a mistake. I know that due to my passion and accomplishments I will surely be one of the best editors your publication has ever had.

xXxD4rthV4d3r57xXx
bow.before.arceus@gmail.com

Breakfast of Genies

Good day, fellow math nerds and Mark. Once again, Pastry Genie here. Let's just cut to the chase, shall we? You aren't actually reading this article for the helpful baking tips, are you? You're just here for the recipes. I can't really say that I blame you. They *are* pretty tasty. So today I'm going to do things a little bit differently. I'm still going to tell you how to make something delicious, but I'm not going to teach you anything. Let us begin.

If you recall, last issue I gave you my favourite banana bread recipe. I told you that I had something special planned for the leftovers. But since we both know that there aren't any leftovers, I suggest you go and make another loaf. It's alright. I will wait. Did you make one? No? What do you mean no? *Sigh*. If you must, go and get a (*shudder*) store-bought one. You will need some banana bread if you want to make the most epic breakfast ever.

Do you remember last night? Well, you puked in your roommate's favourite pair of leopard print, platform shoes. She (or he, no judgment here) wasn't too happy with you. Or perhaps your best friend just broke up with their partner of three years and needs some cheering up. Or maybe you only just remembered that Father's Day is coming up soon. This breakfast will be perfect for you. Whether you're down on your knees begging forgiveness, or bringing a smile to the face of someone who thought they'd never be happy again, or making something for your Dad because you're too cheap to buy a real gift, this breakfast will be perfect for you. Are you ready to find out what it is? Banana bread French toast, with whiskey caramel sauce, candied maple bacon, and bourbon whipped cream. Wipe the drool off your chin and let's begin.

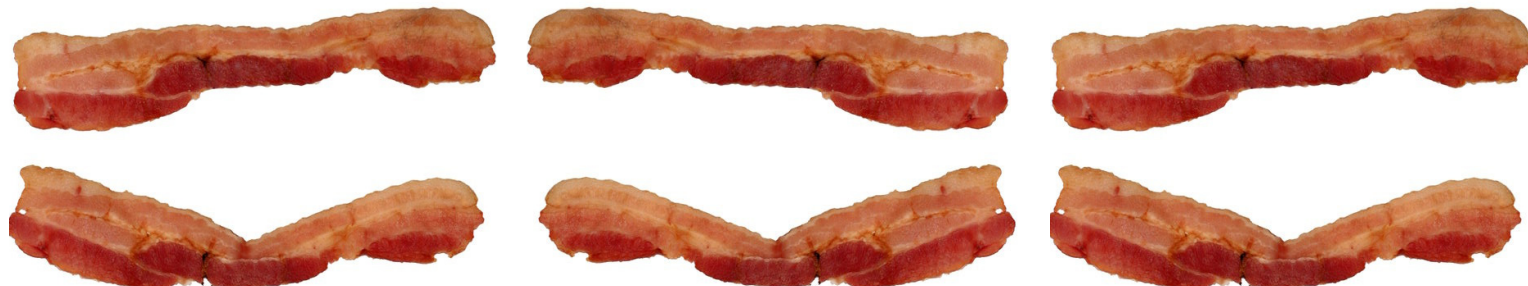
Banana Bread French Toast

INGREDIENTS

- 1 loaf banana bread (homemade or [*shudder*] store bought), sliced
- 4 eggs
- 2/3 cup milk
- 1 tbsp cinnamon
- 1 tsp vanilla extract
- Butter or bacon fat (for frying)

DIRECTIONS

Whisk together eggs, milk, cinnamon, and vanilla. Pour into a shallow bowl or pie tin. Melt the butter in a large frying pan over medium/high heat. Dip the bread slices into the egg mixture making sure both sides are coated. Allowing the mixture to soak into the bread. Shake off any extra mix. Gently place the bread into the pan. Cook until golden brown on one side (then flip) and brown the other.



Whiskey Caramel Sauce

INGREDIENTS

- 2 ½ cups sugar
- ½ cup water
- 2 cups 35% cream
- 1 ½ tsp butter
- 1–2 oz whiskey (or to taste)

DIRECTIONS

In a sauce pot, bring the sugar and water to a boil over high heat. Do not stir the pot. Cook until it reaches an amber colour. Remove from heat. Very carefully, whisk in butter. While whisking slowly pour in the cream. Watch the steam! It can burn you! Be careful! It's okay if the sugar clumps a little. Just place the pot back on the heat and stir until the lumps have melted. Remove from heat. Stir in whiskey.

Candied Maple Bacon

[*In case you don't have bacon at home, we have included some below.—GingerbrED*]

INGREDIENTS

- 1 lb bacon (I like the extra-smoked kind for this recipe)
- ½ cup maple syrup (the real stuff, not table syrup)

DIRECTIONS

Preheat oven to 350F. Line a baking sheet with foil (to make for easier cleanup) and place a cooling rack on top. Spread the bacon evenly over the cooling rack, making sure that the pieces don't overlap. Generously spoon syrup over bacon, making sure to reserve some of the syrup for later. Bake for 15 minutes. Remove from the oven and with a pair of tongs or a fork flip the bacon over. Spoon the rest of the syrup onto the bacon. Bake for another 5 minutes or until desired crispiness is achieved. Allow to cool 5 minutes on the rack before transferring the bacon to a plate.

Bourbon Whipped Cream

INGREDIENTS

- 2 cups 35% cream
- 2–6 tbsp sugar (sweeten to your taste)
- 1 oz bourbon

DIRECTIONS

Whisk cream, sugar, and bourbon with a hand or stand mixer to stiff peaks. Serve.

Now all you have to do is put it all together and enjoy. Keep in mind that the caramel sauce and whipped cream both have alcohol in them. Please eat responsibly.

Cheers!

Your friendly neighbourhood Pastry Genie

The Mysterious Balsamic and Basil Triscuits

This article started off titled "An Ode to Balsamic and Basil Triscuits". As far as I know, this flavour of Triscuits went extinct about three and a half years ago; this was an unfortunate turn of events, as Balsamic and Basil was my favourite flavour of Triscuits. While the Roasted Tomato and Olive Oil, Rosemary and Olive Oil, new-at-the-time Dill, Sea Salt, and Olive Oil flavours were definitely quality flavours, they are nothing in comparison.

I went to double-check specific information about them when I came across the following website: <http://www.snack-works.ca/en/products/Triscuit/Original>. At the time I opened it, at the bottom of the page there was a picture of "NEW" Balsamic and Basil Triscuits, with the caption "The artisanal taste that stimulates the senses has **returned**. With the divine tartness of balsamic and the subtle spice of basil, this pairing of complex flavours is a snacking masterpiece." [Emphasis mine.] This may still be there!

To me, this offers some sort of golden, shiny wire of hope, some sort of justification for faith, some sort of charitable donation to my wishful mind, that maybe they'll be back. (Completely unrelated, I just made references to both FFVII *and* an old 50's song.) Could it actually be that my favourite crackers are back? I'd even pay the exorbitant Victoria-area price for them. (Triscuits used to be \$2 a box or less in Waterloo; I can't get them for under \$3 here, and that's on sale. This matters when you eat them as much as I do.)

Of course, when I went to the grocery store, I didn't find them. Just the usual assortment of the other Original flavours, the Thin Crisps flavours, and the Brown Rice flavours. Who knows why? Maybe they haven't been stocked in stores across Canada yet. Maybe they don't actually exist? I don't know. But Facebook seems to believe they do, and in particular, the official Triscuit Canada page offers up evidence: "A yellow pepper, a mozzarella ball and some pesto walk onto a Balsamic & Basil Triscuit..." in a post from April 29th, 2015, with link: <https://www.facebook.com/TriscuitCanada/photos/a.201237403245971.45153.184730621563316/816524801717225/?type=1>

Surely they must be back. It's the only thing that makes any sense. But in the comment section on that post is another warning sign: "Where do I find the balsamic basil Triscuits in Atlantic Canada? Had them a few times, now can't find them!! :(" Whether or not they spread to "remote" regions like BC or the entirety of Atlantic Canada within the next few months is debatable. Whether or not they are even for sale yet is perhaps also up in the air; I have no evidence in favour of this.

Perhaps Balsamic and Basil Triscuits are back. Perhaps they aren't. All I know is that their mysterious nature makes them all the more intriguing, and hopefully they'll taste just as good as I remember when I do manage to locate a box.

Scythe Marshall

The 24-Hour Mathie Sexathlon

These things exist? The more you know...

So you and (0 to infinity) other people have decided to test your physical limitations and, unlike the Socrateses and Descartes of past, your methods are inelegant and quite possibly dangerous. No enemy to pleasure, I will be your humble guide to the world of endurance sex: the bedroom-living room-kitchen triathlon; the hackneyed dog; the softwood lumber dispute.

Preparing is fairly simple: start by assessing the needs of you and your guests. Everyone will need plenty of liquid: 2 litres per day per person plus an additional 2 litres a day to compensate for loss of bodily fluids. As mathies, ample pie is also required (mathie diets are about 30% pie). Gatorade is great for replacing everyone's electrolytes, as is a Pikachu doll electrocution play toy. Not everyone can last through the continuous efforts, so have some relaxing games ready, like Smash and Mario Party. Throw in some snacks and pizza (pizza guys *love* telling stories about these things) and probably some Coke (people always seem to be bringing that up at my parties). At this point, this is a run-of-the-mill mathie party, so it's time to kick it up a notch. Use protection and do not knock anyone up.

On the day of, collect some blankets and pillows and fill any intended use rooms with them. Clearly identify any pointy surfaces as some people will want to use those and other will want to avoid them. I suggest a lot of plastic wrap for anything that could be damaged by water because otherwise, it will be. As your guests filter in, start the party in the rear (rooms of the house). Keep medical supplies handy and leave triage to the person dressed as a sexy nurse—one always shows up and, for some inexplicable reason, has first aid training. Confiscate and hide any copies of the Kama Sutra as it is the one and only cause of 911 emergencies I have born witness to—three times, in fact.

As the night sets in, set some ground rules. Not awake means no consent. If someone falls asleep on a crucial surface or device, gently move them to a comfortable bed. People who fall asleep on the ground are not to be disturbed, unless it is their turn in Mario Party. 2 AM is Red Bull Hour: consume all the Red Bull you can via any method through any orifice; encourage people with prizes of fairy wings. Do remember that rest is a good idea: everyone still has half the day ahead of them.

Then it happens: the pinnacle of physical, meta-physical, and mathematical enlightenment rises from the crusty coatings of your home. As the morning cracks, like well-versed experts, your guests use math-like reflexes: timing refractory periods with Smash rounds, and proving theorems between moans. Empty cans, condoms, and pizza boxes litter the ground, mixed amongst proofs hastily written in blood, sweat, and semen. The winner of the grand SSB tournament finds themselves a twitching mess on the floor, as a result of victory punishments. You look upon the glory and despair; you still have no solutions for your STAT 231 assignment. Sigh, some things are just too hard.

Mentula Mathematica

profQUOTES

Student: "Is 'subliminal' like *Inception*?"
 Prof: "Oh god...half of you are confused and the other half are offended. That guy is taking a picture. Moving on."
 Campbell, PSYCH 101

[A student gets up to close the door.]
 Prof: "Thank you, I'm glad you're not just storming out."
 Batty, CS 475

"Thanks for quoting me in *mathNEWS* when I use profanity."
 Watrous, CS 360

"Last term, people asked why that happened. So, this term, I'm going to explain it before the questions come in. It happens because reasons."
 Holtby, CS 136

Finding a Match

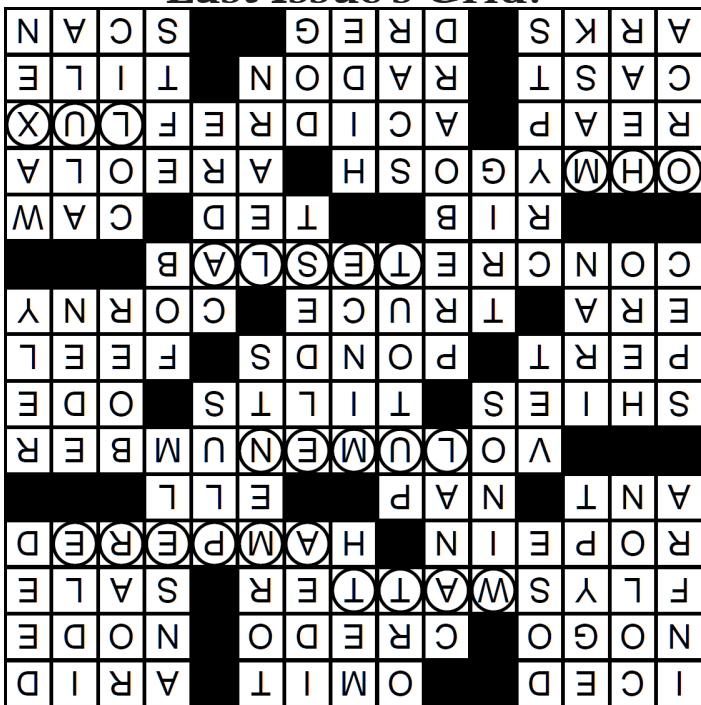
Unsatisfied with the current state of my life, I decided to go on a match-making website. While I wasn't a big fan of the UI, there were a few really attractive people. I knew the moment I saw their profiles that I wanted to spend endless hours with them. So I sent one of them a message and we agreed to meet up.

I made sure to wear my best outfit. I really feel like the meeting went well. We easily had a nice conversation going and they were really impressed with some of my past exploits. I am hoping they will agree to a four month commitment, but I do have some other prospects if this one doesn't work out.

Beyond Meta

SIDENOTE: It's a good thing that corporations are people, or else this article would have been inaccurate.

Last Issue's Grid:



Soccer: Watching a Train Wreck

While a good portion of people do not care much for soccer, I have something I must say to all soccer fans today. While I find your sport incredibly boring, I must say that the complete unraveling of one of your biggest organizations to be incredibly entertaining. Watching all the drama surrounding FIFA that's occurred over the past two weeks, including arrests, resignations, terrible movies, and John Oliver drinking Bud Light Lime on TV, is like watching a train wreck. It's terrible for those involved, but so entertaining that you can't turn away.

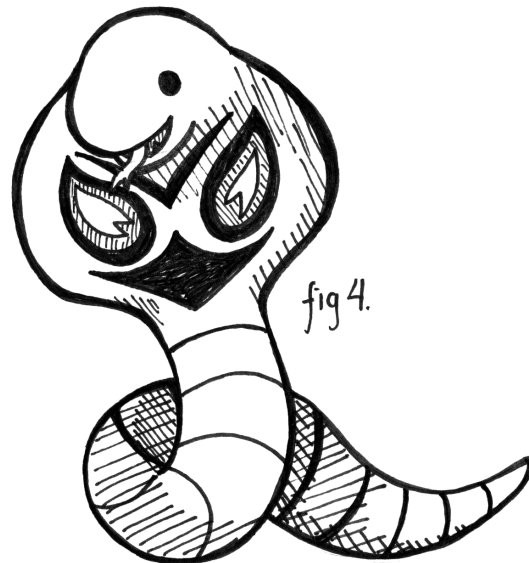
It's probably not very good for FIFA, but for the rest of us, it's not hard to see this as a good thing considering the evidence. They're an organization so corrupt that they gave the 2022 World Cup to Qatar, a country where soccer can't even be played during the day because it's so hot, and whose treatment of foreign workers is downright appalling. It is estimated that over 4,000 workers will die before the World Cup. It turns out that several former and current FIFA members were arrested for bribery, which explains how Qatar was considered for the Cup.

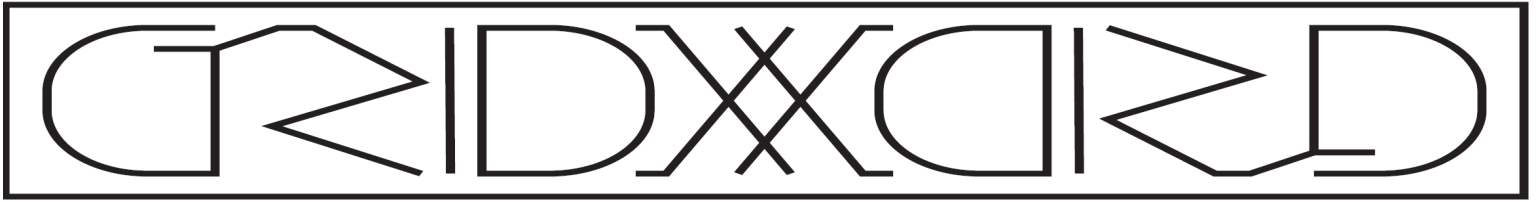
The arrests were followed by the re-election of the man who oversaw Qatar's World Cup announcement, FIFA's president Septic Bladder. Mere days later, Bladder resigned, which shook the soccer world by storm, as it was finally free of, in John Oliver's words, "The Swiss Demon". Also, Jack Warner, one of the arrested individuals, defended his organization by citing an article by the Onion, showing that no real news can make FIFA look good.

Later, FIFA's money laundering project and movie, *United Passions*, opened in the United States to a crowd of 2, and an even lower Metacritic score. This movie, described as "pure cinematic excrement" by the *Guardian*, stars Tim Roth as Septic Bladder, and also Sam Neill, who chose to star in this instead of *Jurassic World*. The movie is described as "the saga of the World Cup and the three wholly honest and ethical men who created it" which is a denial that is so incredibly specific it's hilarious.

The current train wreck that is FIFA's saga has ended for now, though it may continue, bringing more and more entertainment.

NotASoccerFan





gridCOMMENTS

puzzleMASTER *bunniED* wants to fight.

Hello again, everyone! Once again, I am blown away by 13 submissions to the *gridWORD*, all entirely correct! The combined shock from these last two issues has led to my calling in a ringer for this issue's *gridWORD*; please welcome *bunniED* to the *gridWORD*-creating crew! Congratulations, *bunniED*, on a title that you will never be able to scrub from your past.

Here are some honourable mentions for "What is the common unit that is used to measure human motivation?":

"Boobs: Number of unsolved math questions."—D. MD.

"Caffeine intake"—Micca Vergara

"Pizza slices"—Shannon Broekhoven

Great answers all around, but my favourite is:

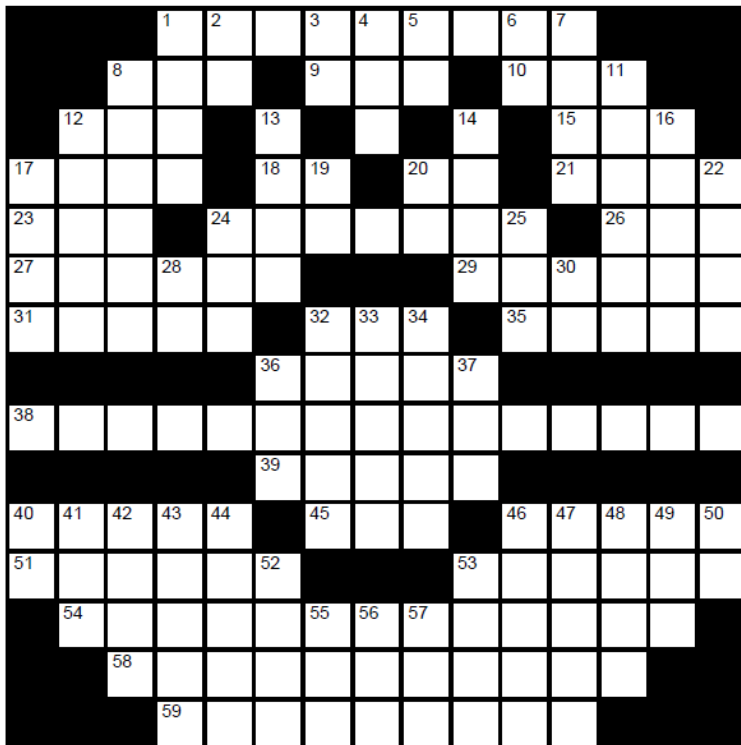
"No scale has ever been made small enough."—Jason Baker

Jason, please visit the *mathNEWS* Office in MC 3030 to receive a \$5 gift card to the C&D!

Remember to submit your *gridWORD* solutions in the **BLACK BOX** by the Comfy before **6:30 PM on June 22nd**. Ties will be decided by *bunniED*'s favourite answer to the *gridQUESTION*: "Who's that Pokémon: disgruntled mushroom, dancing fruit, snail rock (snock)?"

ConvolutED

This Issue's Grid:



gridCLUES

Across

1. Fig. 1*
8. _____tre Berry*
9. Strive
10. Says, "This isn't the time to use that!"*
12. Job
15. One of the protagonists of Ruby/Sapphire/Emerald*
17. Sea eagle
18. Hit Points*
20. π
21. Squeaks by
23. Martial artist Bruce
24. Learned by mimes at lvl 4*
26. Element 139
27. I ate sushi with my hands 'cause _____sticks broke.*
29. Give less leash
31. Normal move, power 65*
32. Invoice
35. Nautical "STOP!"
36. Struck by ennui
38. A cute green and yellow prop for Pokémon*
39. Fig. 3*
40. Confesses
45. Place for flyers and levitators*
46. Kanto Elite Four member*
51. Rumba shaker
53. e.g. an alarm clock
54. Poison is _____ fairy*
58. Obstructionist
59. Having no citizenship

Down

1. Battles you in Sprout Tower*
2. Technical Machine*
3. Effort Values*
4. Can be done by omission
5. Can precede "the People"
6. Is this clue a definition?
7. _____ Corner*
8. Originally only found from headbutting trees*
11. Evolves from Fig. 2*
12. _____ Ball: more effective than a Poké Ball*
13. Where you find PARCEL, among other things*
14. Someone who does 4 Down
16. Snow cryptids
17. Residents of New Bark lab*
19. Restored with ethers*
20. Found in every Pokémon Centre and protag home*
22. If you _____ money to mom, she bought Fig. 5 for your room*
24. Officer Jenny*
25. Gift to Saffron guards*
28. Difficult to forget*
30. Individual Values*
32. Tasks
33. Fig. 4*
34. Dazzling
36. Implore
37. Flavour that adds to beauty*
40. Follows "I think, therefore I"
41. _____ deferens
42. Little bits
43. Verucas
44. Dash
46. Vapourizes
47. Unowns resemble them*
48. CCCP, to them
49. _____ Ball: for water- and bug-types*
50. Not always exclusive?
52. Elsa's sister
53. Death rattle
55. Catch
56. Wonderment
57. Lass



Send your articles, *profQUOTES*, jelly donuts, and *gridWORD* solutions to mathnews@gmail.com or the **BLACK BOX** on the 3rd floor of MC!