

math NEWS

Volume 105, Issue 4

Tuesday, November 6th, 2007

Next production night for
mathNEWS

will be

~~Monday~~
~~Wednesday~~
→ ~~Tuesday~~
~~Thursday~~

Meet at 6:30 in MC 3038

Food shall be available



lookAHEAD

mathNEWS

November 6	Issue #4 finds a nickel
November 12	Production Night #5! 6:30 PM, MathSoc office
November 19	Issue #5 steals it

MathSoc

November 17	Charity Ball
Thursdays	Games nights
Fridays	Movie nights

Student Awards & Financial Aid

November 15	Last day to submit Undergraduate Bursary Appeals for Fall
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CECS

November 5	Continuous phase begins See cecs.uwaterloo.ca/students/datesF07.php for details
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Feds

See feds.ca/events for details

Miscellaneous

November 11	Remembrance Day
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Planning on taking CS 134?

Better get on that!

If you were planning to take CS 134 for your degree plan and were intending to put it off until 4B, you may want to revise your plans. Starting in Fall 2008, the first year CS courses are changing to reflect the new streaming system for CS majors and non-majors. That means that CS 133, CS 134, etc. will no longer be offered. The planned last offering of CS 134 for all you stragglers out there is Fall 2008. If you don't take CS 134 before the final offering of the course, you will have to restart the course sequence from the beginning. Unless you really like CS (and I'm guessing you don't, otherwise you wouldn't be procrastinating in taking it) you should ensure you take CS 134 soon.

If you have any questions, you can drop me a line at presz@mathsoc.uwaterloo.ca or visit a CS advisor.

Andrew

El Presidente

ISSN 0705—0410

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The pun and only: Peter Simonyi

VPAS Says

Minions listen?

We're coming off a high from last week's events. Approx. π^2 day was a great success. Pie was distributed and consumed. Fun times were had by all. Mathies also determined the status of numbers in relation to 9000. Frabjous functional fun ensued. Prizes were distributed; all is well. *[Goodness, he's psychic! — mossEd]*

We are running plenty of events you may be interested in on a weekly basis. There are games nights on Thursdays. If you're interested in relaxing and wasting some time playing various games with fellow mathies, drop by the comfy (MC 3001) at 7. This Friday there will also be a movie night. 2 movies, 0 dollars — what better deal is there? Join us in MC 2066 at 6:30. If you want to keep up with our events, you can go to mathsoc.uwaterloo.ca and sign up for our Google calendar (there's a link on the left side).

We have the biggest event of the year, Charity Ball, coming up on November 17th. If you want more information about it, find its mathNEWS article (page 5) or drop by MC 3038 to get information.

As always, if you have an idea for a social event or just want to meet the man behind the moderately-interesting-but-mostly-informative VPAS Says, you can drop me a line at vpas@mathsoc.uwaterloo.ca or in my office, MC 3039. Hope to hear from you.

Alex McCausland

Vice President, Activities & Services

Fall 2007

Thor's Thoughts

What if teleportation were possible? It raises some interesting problems. Theoretically, the process could be accomplished by in some way scanning every atom of your body (ignoring the Heisenberg Uncertainty Principle), and then transmitting that information far away. We could then use that information to reconstruct you at the destination. If we used exactly the same atoms with exactly the same momentum etc, there is no real physical reason why the new version of you wouldn't be the same person (assuming we get rid of the old one).

Setting aside the rather sticky issue of how to dispose of the original version of you, we also need to consider whether or not it would be a good idea to teleport in this manner. Fundamentally, this may even be considered a theistic issue, since it deals with the concept of whether or not there's something called a soul, and whether it has a physical presence. I mean, from a physical point of view, you might well be considered "dead" during the interval, but if your exact personality and identity are preserved, is there actually a problem with agreeing to this type of thing?

Another question is whether or not it makes a difference if you use the same atoms or different ones. Maybe you could tear your own molecules apart and fling them through the air, and then reassemble them. In that instance, you couldn't really be viewed as "dead" so much as "injured", since you could be restored to consciousness. More importantly, is there a risk of a Man-in-the-Middle attack at any point during this transmission? That is a potentially chilling prospect.

Thor

mathHELP

Now with a pre-question blurb! How exciting!

OK, you normally don't hear me doing a pre-question blurb, but this week, I felt it appropriate to do so. To all of those who are wondering where I was last time, simply put, the article got lost somewhere in the *mathNEWS* production system. I blame the evil dancing monkeys.

Anywho, to the letters that I was planning to print two weeks ago...

Dear InsideR — I've got this professor who's really, really boring. In fact, he pretty much just reads the slides and talks about nothing. And then he tells us that he doesn't want to go over the rest of the slides and to read it ourselves (which seems like a foreign language to me). The midterm is fast approaching, and I have no idea what's going on it, since we didn't really cover all that much material in class. I would go to another lecture, but he's the only person teaching the course this term. What do I do? — **Stressed**

Dear Stressed — Unfortunately, you will get bad professors pretty much every term here; it's just a fact of university. You mind telling me which prof this is so that I know to avoid him/her in the future? Anywho, I have found that forming a study group with a few classmates, the lecture notes and the textbook can be a great help. Everyone in the class has their own strengths and weaknesses when it comes to their knowledge of the course material, and discussing it with each other will benefit everyone in the study group.

InsideR

Dear InsideR — I cannot find a healthy breakfast on this campus. I'm not talking about fried eggs here — too much cholesterol for my diet. I'm just thinking a bowl of cereal and a glass of orange juice. Where can I find a good, healthy breakfast to keep me alert during the morning? — **Needing Nourishment**

Dear Nourishment — It's good that you're concerned for your health, but giving up fried eggs is almost a little desperate in my opinion. May I suggest a bagel from the C&D to go with that OJ? That will provide the complex carbs that you need to get past those morning lectures.

InsideR

Dear InsideR — [despite what you may want to believe, I can confirm that this actually did happen — and no, not by me.] I just assembled a program for one of my courses, and I wanted to verify the assembly. So I called `xxd program.app > program.app`, and now it's not running even though my code looks fine. InsideR, why is it not working? — **Unix Noob**

Dear Noob — Please tell me that I misread your letter. Please tell me that you did not just take a perfectly good piece of machine code, overwrite the file with a human-readable format, and seriously expect it to run. You are a tr00 n00b. To Ryerson with you. [Note: since sending this response, and official from Ryerson "University" has contacted me to ask me why I sent them such a noob. Ouch.]

InsideR

mathNEWS_InsideR@hotmail.com is completely confidential

mathNEWSmailBAG

Dear mathNEWS crew,

We all know what happens to leftover copies of *Imprint*, but what happens to leftover copies of *mathNEWS*?

Anonymous

Sad leftover copies of *mathNEWS*, which will never feel the joy of being read, get sacrificed to the *mathGODS* before being banished to the Real-Time labs, never to be seen again.

InsideR

Some get the honour of residing in the MathSoc office for people who aren't around on the publication day. Some go into our archives, never to see the light of day again.

mossEd

to: mathletics@mathsoc.uwaterloo.ca

Our price: US \$ 79.95 retail price — US \$ 449.00 Adobe V8

Lucile Murdock

I don't think I want tomato juice from a software company. Thanks.

mossEd

Dear The Rage,

You know what I hate almost as much as people blocking the halls? People blocking sidewalks!

I hate it when people saunter on the sidewalk, especially if they have 2 or 3 friends with them all walking side-by-side, creating a human blockade. Plus, they always walk ever so slow! And because of the human blockade effect, it's impossible to pass them without going onto the street and risk getting hit by a car.

It's nice to want to talk to your friends while you walk, but some of us have things to do and places to go! Can't you walk faster to your destination and then talk to your friends? Sheesh!

Someone at the BLACK BOX

O angry BLACK BOX writer, I feel your pain and fury at those who choose it as their purpose in life to block the whole damned sidewalk. However, there are a few things that can be done to remedy the problem. Some are best done with a partner, others solo; see what works for you.

- **The Classic.** Step on some heels. Easy to pretend it was a mistake and it always gets their attention so they can get out of the way.
- **The Distraction.** Talk, rather loudly, about something that causes others great discomfort. Your anal sex adventures/conquests, that great porno you watched last night involving furries — anything involving strange intercourse should do. The kinkier, the better. This will also cause them to notice and move. Just do it with confidence and style. (Partners are great for this.)
- If all else fails, **The Shove.** You've got places to be, right? Well, get there! Push past those assholes and keep right on going. Or, to rub salt in the wound, slow down as soon as you pass them. (Best with one or two like-minded friends.)

To find more people out there who hate the slow-walkers hiding among us, visit the facebook group "I Secretly Want To Punch Slow Walking People In The Back Of The Head". Over 550,000 people who like to get where they're going.

The Rage

Your Surrogate Mother

Nagging away from home

Week 4: WHERE DO YOU THINK YOU'RE GOING WITHOUT A COAT?!

It's getting cold out and you should dress the part. If everyone did this then it would no longer be weird. And holy crap, it shouldn't be weird! It'll get cold out, so bundle up!

So go looking for a good coat, scarf, toque, and mitts or gloves. And don't overlook boots; at least think about finding a warm pair of foot coverings with good grip. Just about anything more practical than runners will do. Try the following places:

- Home: if your parents live nearby and you forgot your gear, don't forget to pick it up next time you're there. If you wait until you need it, uh, it'll be too late. Duh.
- The mall: take the iXpress to either Conestoga or Fairview to shop around.
- Mark's Work Wearhouse: there's a location just south of University Ave on Westmount. I got my ski jacket there — it has a separable shell and inner fleece, is a nice colour, has lots of pockets, and cost less than \$150. They also, very strangely, have a large selection of fashionable hats, gloves, and scarves in colourful yarns and practical cotton. These products have as much to do with work clothes as dishware and kitchen towels have to do with Canadian Tire — yay de-specialization!
- Value Village: I forgot this one! Thanks, InsideR! You can find great deals. Just take the 8 bus to Ottawa street at Weber. Huge savings for a bit of a trek.

You should at least consider snow pants if you like to play in the snow. We tend to get a respectable amount of snow, and tobogganing and snow-man building is not unheard of. Personally, if I'm *planning* on frolicking in the snow, I like to dress the part.

So start a trend! We can be cozier and happier together.

Half-pint
Unrecognizable in her winter gear

Free theatre workshop series

Presented by KWLT and FASS

Do you like going to *free* events, where you learn stuff? Then come on out and learn awesome things like Stage Combat and Producing!

The Kitchener-Waterloo Little Theatre and the FASS Theatre Company are putting on a series of workshops this month (starting November 7th). No experience required for anything!

- November 7th — **Stage Combat** with Nick Oddson
- November 14th — **Stage Management** with Erin Moffat
- November 21th — **Producing** with Anita Kilgour
- November 28th — **Improvisation** with Bernie Roehl

Each session is from **7pm to 10pm in MC 2017**. If you're thinking of attending, register at ad@kwlt.org. Registration isn't required but suggested. More details are available at www.kwlt.org.

Hope to see you there!

Robert Burke
Producer, FASS 2008
fass.uwaterloo.ca

Life's a Game

Halloween Edition

I find life is a lot more interesting if you treat everything as a game. Now, I bring to you games to play for Halloween. Since Halloween has already passed by the time you read this, I instead give you games to play with the candy you have sitting around.

- **Candy Tower** — Make a massive tower out of all your candy. See how high you can get it to go. Finding stable equilibria is useful. Applied Math can actually be applied to this problem!
- **Hide the Candy** — If you don't want to eat your candy, you can hide it in various places around your house. Specifically, hide it in your housemates' rooms. In places where the furnace will get them melting. Score points equal to the area of melted chocolate you make on your housemates' floors. *[Hiding stuff yourself only means you know where it is.]* — Angelo
- **Yummy meal ideas** — Invite your sweetie (or your best friend) over for a dinner. Try to make a dinner entirely out of your candy. Or, if that's not do-able, just go for a pizza. Points for each candy used that can't be identified by the consumer.
- **Is it over 9000?** — See if you can eat 9000 calories of candy in one sitting. You might have to buy more for this, but it's well worth it.

In case these games aren't enough, here are some other fun games to play:

- **The game you can't win** — This game is simple. Every time you think of it you lose, and have to say "I lost". You can't win.
- **The name game** — Whenever someone says your name, respond by saying the name of another person who is in ear-shot. If the person you call answers instead of saying a name, you get a point. If you answer when someone says your name, you lose a point.
- **Random hugging game** — Hug random people you see walking around, or sitting. Do this at your own risk. You could get slapped, expelled, arrested, or sued. You could also end up scoring with the person and getting an STD. *mathNEWS* accepts no responsibility for what happens to you.
- **mathNEWS article game** — Write articles for *mathNEWS*. Score free pizza for each one you get published by coming to production night.

π

profQUOTES

that wouldn't fit with the rest

I believe it does imply differentiability, but I can't think of any case where we would care.

Wolczuk, MATH 237

What a terrible diagram. Well, hopefully you get it.

Wolczuk, MATH 237

The first question is: does anybody use this stuff? No. (Pause.) The first thing you should feel in anger: "Why are you wasting my time and energy on things that nobody else uses"? Well, that's what university is.

Buhr, CS 343

Pissed Corrections

I'd like to point out the grave errors in the so called Halloween issue of Imprint — notably in their hi-I'm-your-stalker feature, Missed Connections.

According to Article 5, Section 3, Subsection 6, Item 4, subclause 12 of the Codex Demonica, mummies are **not** after one's brains, as the last entry would have you believe. All they want to do is give you a hug. And by "hug" I mean "curse". And only if you happen to violate their tomb. Who can blame them? I'd pity the fool who stumbles errantly into my eternal resting place after my treasure. Also, rending open someone's skull to acquire the succulent grey matter inside would cause a mess of blood everywhere. Why waste good blood staining your nice linen wrappings? You'd be the laughing stock of the undead community!

Furthermore, vampires aren't Satanists and zombies don't suck souls. Most zombies barely have lips, so they can't suck, and vampires are too cool for Satan.

Lohste-Lauhque, the Lich

Charity Ball

Quickly approaching!

Want an excuse to dress up? Have nothing to do on November 17th? Need a reason to ask out that secret crush? Why not come to Math Charity Ball? Tickets are on sale now in MC 3038!

- 1 for \$37.50
- 2 for \$70.00
- Table of 8 for \$260.00

This year's ball should be bigger and better than ever! It will be held at Fed Hall and promises to be quite the fancy affair. More information on the menu and event are available in MC 3038. Just ask the office worker. Hope to see you all there.

Val²

mastHEAD

Apparently, the fortnight before the week before you read this was this term's peak period for *profQUOTES*. We had a total of 83 — it's a good thing the BLACK BOX is so big! Needless to say, we cut out many of the less humourous ones, and some of the funny ones, to get a nicely sized batch of higher-than-normal quality, or so I hope. Then we thought about Halloween, wrote some stuff, and had a good time.

We got to feasting, carefully avoiding dropping the "e", and found we had a sheet of paper and a pen. So we asked our production staff, "who is your mortal enemy?". They, and their answers, were: π , "Ian's mom"; Kaitlyn 'Half-pint', "death"; Richard, "drahciR"; Andrew, "CS 490"; InsideR, "mossEd's puns"; Edgar, "Thor"; Thor, "Edgar"; Robert, "the writer who let Sylar live"; and Matt, "scratch fury: destroyer of worlds".

Thanks goes to Graphics for putting the ink on the paper, and for promising me a paper sample book with cover colours they actually have. Thanks to the letter "e" for keeping our repast from becoming too quick. Also, bonus points go to the Italians for inventing the amazing bread-based dish we call pizza. Yay food and ink!

Peter 'mossEd' Simonyi, "I'm more worried about my immortal enemies."

Michaelangelo 'Angelo' Finistauri "Nyarlathotep"

Free happiness

Guaranteed, or your money back

Are you sad? Do you want to be happy? Now you can be happy with the mathNEWS "Get yourself happy" kit (patent pending). To get one, all you have to do is come to mathNEWS production night (see the *lookAHEAD* for when the next one is). You don't even have to write an article! You can proofread articles or draw a comic! But come early; quantities are limited. We can't guarantee to satisfy all the demand.

A long-awaited return

It is now November, and November this year is set to have a very important event: the return of *Futurama*, easily one of the best TV shows of recent years. If it was so great, then why was it cancelled, you might ask. If you're a person who doesn't know why it was cancelled: the reason for this is that Fox handled the show in the completely wrong way. It was often being pre-empted for other programming, or having its time slot moved around. By the time it was taken off the air, even the most dedicated fan wasn't watching simply because no one knew when it was going to be on. They would have been kidding themselves to believe that they were going to get new people watching simply by changing the night it was on, and even a dedicated fan, one who sets their schedule up to be able to watch, can't do so when it's aired randomly throughout the week. Had Fox just picked a time and stuck with it the show may have done better, but half an hour of comedic gold every one or two weeks is hardly important enough to try to figure out when you can see it. And that is the story of how *Futurama* was canceled. Join me next week, when I discuss how another great show, *Studio 60 on the Sunset Strip*, was cancelled for being too expensive, and trying to show society isn't stupid, when, in fact, it is.

DanS

The mathematics of Super Mario Brothers

Motivation: It is well known that *Super Mario Brothers* is a game series that is defined for all positive real numbers. We are interested in determining how the games act for large values in the series.

We already know that as Mario approaches a Goomba the series is bounded by the function of one over two to the power x . Mario; therefore, approaches zero for non-trivial Marios (i.e. Mario with a star).

Other behavioural patterns found by Mario is that Mario is always greater than Luigi. For every Luigi, there exist at least 3 times as many Marios. So if Luigi is less than δ we cannot find an ϵ such that Mario is less than ϵ for all Luigis. For all values of Marios, the Mushroom is the inverse of the Goomba.

We can determine Mario's multivariate behaviour by using the Yoshi matrix transformation. However, the Yoshi has the long-run behaviour of the single state: the egg state.

Further analysis for the *Super Mario Brothers* is a growing branch for graduate studies in Pure Math. See your professor for details, and shortly after receive a mark of 32.

Angelo

Interesting Math

Part 1: Chomp

Writing this, the day before Halloween (All Hallow's Eve Eve?), I can't help but think about this game when thinking up some interesting math. This is a game played on a rectangular "chocolate bar" made up of smaller blocks — think of a Hershey's chocolate bar. The two players take turns "eating" blocks out of it, as well as every block above or to the right of it. The bottom left block is "poisoned", so the player who is forced to eat it loses [and dies. — Angelo]. It may be easier to envision this game as a set of lattice points in the two-dimensional Euclidean plane. The pieces in the $m \times n$ game are the lattice points in and on the perimeter of the rectangle defined by the points $(0, 0)$, $(0, m-1)$, $(m-1, n-1)$, and $(n-1, 0)$. Notice this gives mn total pieces. The piece at $(0, 0)$ is the poisoned block, and a move consists of a player choosing a point (a_1, a_2) and removing the set of points (b_1, b_2) such that $a_1 < b_1$ and $a_2 < b_2$ (this formulation of the game helps when we move into higher dimensions).

It's clear that for the 1×1 game, the first player loses — he or she has no option but to take the poisoned piece immediately. However, for the case where we start with any larger rectangle, it turns out the first player can always win. If this is not clear, we can use a strategy-stealing argument. On an $m \times n$ board, let us first assume that the second player has a winning strategy against any move the first player makes on the board. Now suppose the first player takes the piece (m, n) . By our assumption, the opponent has a move that will lead to his or her victory. However, if this is the case, the first player could have made that move by simply adding the (m, n) piece into his move, as every other move will encompass it. Hence, the first player could have made a move that would result in victory. We have thus "stolen" the second player's strategy, and shown the first player will always win.

We can see how this game can be extended to higher dimensions if we look at the formal setup of the situation. In the n -dimensional game, we create a lattice on the hyperrectangle extending in the positive axis directions starting from the origin, which is the location of the poisoned piece. Players take turns choosing points (a_1, a_2, \dots, a_n) and removing the set of points (b_1, b_2, \dots, b_n) such that $a_i < b_i$ for all i . Using the strategy-stealing argument, we can see that this game is first-player-winning for games larger than 1 piece, so it's not too interesting from that viewpoint. However, it's not so easy to see the actual strategy to be used, so it still makes for a fun game to try out with friends. A nicer variant to actually play with: an n -dimensional Chomp game corresponds to a number with n distinct prime factors. The size of each dimension of the rectangle corresponds to the power of each prime in its factorization. Players take turns dividing the number by proper divisors, but cannot choose a multiple of a previous divisor used. The player who ends up dividing by 1 loses.

It's much more interesting to play Chomp on hyperrectangles that may not be bounded. Same rules apply - players take turns removing pieces in accordance to the relative position to a target lattice point. Try playing around with the 3-dimensional Chomp, of size $\omega \times \omega \times \omega$, where ω refers to the first transfinite ordinal. Let me know if you find a winning first move!

Vince Chan

Part 2 is on page 11

JobMine sucks

And it's not only the students who find it stupid!

During an interview, we somehow started talking about the JobMine webpage. The employer told me how confused she was about the page organization and how stupid it is. You'd click on 'employers' and out comes an option 'use'. "Use what?" the employer exclaimed to me.

It seems that employers have to click on 3 useless links before getting somewhere, just as students do. So I happily told her that pretty much every co-op student hates the website design.

Well, at least it didn't collapse while she was in there.

Hello World

First-year CS

This is the twisted tale of my induction into the School of Computer Science with no base case, and the horrors of trusting a seemingly well-meaning professor therein. He tempted us with stories of wonderous magics involving lambda and lists and when we arrived to attend the promised lectures we were met with chloroform and batons. I think we were trucked to northern Ontario, or maybe it was just Waterloo Park with lots of special effects, but it was the worst week of my life. When we came to we were assured that the gas we had been subjected to would leave no side effects and were promised cake for our cooperation.

For what seemed like weeks we were beaten with "old rusty" and promised our own if we survived. Many of us were reduced to the empty list. We could eat only if we renounced all other programming languages and proclaimed Scheme the one true path. We were told we did not need job skills, that the theory would carry us to fame and fortune. We believed it; we had no choice. I still can't forget the smell of rotting flesh.

As the hell week came to an end, our ranks were thinned severely. He came to speak to us. Before he got a word out there was a collective shout of "why?". They could beat us all they wanted but to be a Mathie you had to be able to ask questions. Taken aback at our inability to understand our suffering, he did not speak, but only signaled for another flogging. Thoroughly disciplined, we were sent back to the trenches where we evaluated Scheme by hand and recited mantras of praise to the almighty λ . The second time he came to speak to us we did not question. He told us that we were now Functional Programmers, and our final pain would be to bear the brand of the λ we now worshiped. Burned and beaten, we were finally handed our own old rusties and told to wield them well.

Discussing the merits of the new Scheme-based course stream with upper year mathNEWS writers, they noted the quality with which I had been brainwashed. Professor, well done. Well done. (Note: several other writers may have been wounded in the ensuing test of functional mettle, as they did not have a trusty rusty by their side.)

ebering

Why does an apple a day keep the doctor away?

The same reason a clove of garlic a day keeps the vampire away.

My fantasy busts

And other notes from the NHL and sports in general

If you're reading this article because you think I'm about to talk about the chests in my fantasies, then ha, you lose! (Although, I'm sure you can Google up a fair amount of those.) In fact, today I'm going to start the article by talking about a few Fantasy Disappointments this far into the season.

- **Martin Brodeur (NJD), Miika Kiprusoff (CGY), Roberto Luongo (VAN):** This trio of elite goaltenders has started the season slowly, as I mentioned in my last article. But have no fear, they're elite for a reason. Raise your hand if you thought Crosby would go pointless on the season after doing so in the first game of the season? (If you raised your hands you can stop reading, I've got nothing to say to you.) Of the three, the only real worry I have is for Brodeur, who, while awesome, is getting no younger, and has lost Rafalski and the defensive style of old NJ hockey. New coach Sutter is set on playing a more offensive game with his players, and that should lead to increased chances against Brodeur. Would I trade him right now though? Not unless it's his pre-season value! Kipper just got a 6 year extension, by the way, and Luongo is Luongo. Nothing to worry here, move along!
- **Scott Gomez (NYR):** Gomez was poised to hit at least 75 points after signing a 7 million dollar contract in the offseason. Expectations were high that he would get the prime job of playing with Jagr and Straka, and he would excel since he is a natural playmaker. Things haven't worked out recently, as Drury claimed that prime spot to play with Jagr. To make it worse, Straka's out with an injury, and Shanahan has all of 2 goals this season. Gomez should come around eventually, but tamper your expectations, I bet 60–70 points is still attainable.
- **Marian Hossa (ATL):** Hossa began the year with a slight injury, so it's no surprise that his points production isn't matching up to the rest of his talent level. However, since he's come back, he hasn't produced at his usual pace either. Atlanta's record probably has something to do with it, along with the coaching turmoil and whatnot. Considering this is a contract year, I still firmly believe Hossa will hit the 90 point plateau. That just means H2H players need to watch out, he might get really hot near the end (à la Zetterberg of last year)

- **Jonathan Cheechoo (SJ):** Cheechoo came out of nowhere to score 90 some points two years ago, and hasn't gone back there since. His chemistry with Thornton seems all but gone (Thornton has chemistry with everyone anyways), the coach saw it fitting to randomly juggle him between the 2nd and 4th line. I don't think he's going to break 70 points at this rate, and unless he quickly finds his chemistry with Thornton again, he's nothing more than a 55-60 point RW in my opinion.
- **Alexander Semin (WSH):** Semin came on the ice for all of two games before freezing up and limping off with the same ankle injury he had at the beginning of the season. While the talent is undeniable, his owners must be starting to worry about his injury resistance. Semin will still be very good when he returns, and his value's pretty darned low right now, so owners should just hold on to him and hope for the best.

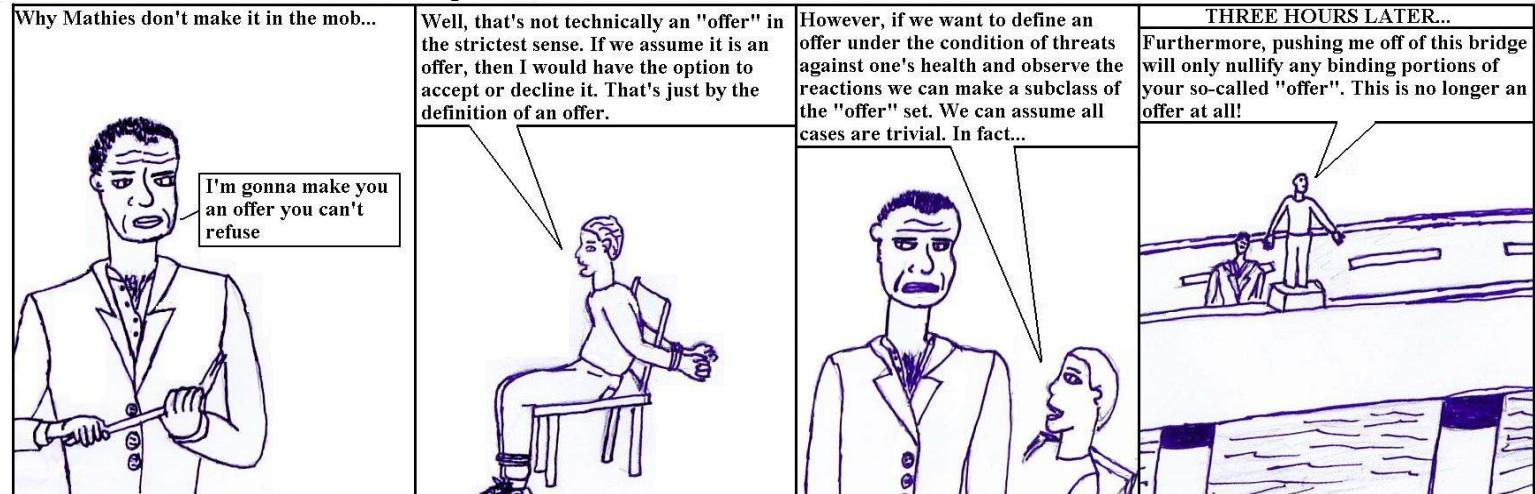
Now, on to some actual observations about the world of sport:

- The Leafs have a Jekyll-and-Hyde thing going with their home and away games. They smothered the Pens and easily handled the Rangers away from the ACC, and then blew a stinker to the Caps by letting in 7. I still blame the pressure of playing in front of ungrateful fans.
- For all the all-star talents on the Coyotes (Hehe), you have to admire what Wayne's been able to get out of his squad. At least, I do. On a related note, props to Andy Murray for being the best out of his hockey club. (St Louis Blues) Brad Boyes's chemistry with Kariya seems to be awesome.
- Chara is a gosh-darned monster. If you missed it, YouTube up "Chara Koci" and you'll see the fight between Chara and Koci (Of Chicago), where Chara made Koci's face all red from the blood everywhere.
- Rick Nash had a marvelous goal the other day, a between-the-legs shot at an awkward angle that went right over the goalie. What a monster season he's having so far!
- Oh, and by the way, Rockies, the fans called. They want their money back for such a pathetic display. On that note, the world series in the last 4 seasons has gone 16–1. That's 3 sweeps and 5 game series. What the hell?

Megaton Panda

Demanding more a competitive World Series

If and Only If



profQUOTES

I believe in fair tests, so I'm hoping today's test will be fair.

Metzger, STAT 231

(Of sad/gloomy students) I haven't given you the midterm yet; you're not allowed to feel that way!

Metzger, STAT 231

The average weight of people will change second by second, because people are driving through McDonald's or something.

Metzger, STAT 231

I'm just going to do that [messy calculation] in my head. (Holds up lecture notes) Here's my head.

Metzger, STAT 231

I think newspapers are amazing. But don't believe a darn thing they say. It's baloney.

Metzger, STAT 231

As usual, Assignment 6 looks long, because I write little essays for you.

Zorxitto, MATH 245

Does that make sense to you? You're still waking up, good.

Zorxitto, MATH 245

(Holds up dry erase marker) High tech, junk. Chalk, good stuff.

Zorxitto, MATH 245

(After skipping proposition 20) Those of you who are keeping track of the numbers are probably wondering, did we ever have Proposition 20? write down, "He skipped Proposition 20."

Zorxitto, MATH 245

Some professors in Chemistry say, "It's in the notes — go read it!"

Zorxitto, MATH 245

"Easily" means I'm bluffing you, but we'll see as you think about it.

Zorxitto, MATH 245

If you teach a Linear Algebra course and you don't teach this you should be shot.

Zorxitto, MATH 245

It's stuck... like blood, not dust.

Zorxitto, MATH 245

How was the midterm? Do you hate me?

Hardy, ACTSC 231

My perfect solutions are available on the web, so you won't need to steal someone else's imperfect solutions.

Hardy, ACTSC 231

Either I'm a really bad teacher or you're a really bad student, but I'm not a bad teacher.

Hardy, ACTSC 231

Yesterday night, I had a dream where I was a bird eating worms... shaped like integrals!

Wolczuk, MATH 237

Remember, if you come into the exam and you know nothing, just take the partial derivative! I have yet to see someone take the partial derivative of their section number, though.

Wolczuk, MATH 237

We don't know f , so we just get fu... no, I didn't mean that!

Wolczuk, MATH 237

Love is not defined. That's so true.

Vasiga, CS 135

So if we close our eyes for a minute and pretend what I just showed you didn't happen...

Vasiga, CS 135

Anyone got a joint or something to smoke?

Vasiga, CS 135

Things like this make me wish I had done more psychedellics as a child.

Vasiga, CS 135

Prof: I need to sacrifice something.

Student: A goat?

Prof: No, it's not a goat. Believe me, I've tried a goat.

Vasiga, CS 135

Extinction — it's a stable population.

Harmsworth, MATH 117

The problem is people don't behave quite like bacteria: if you give them unlimited food and space, some of them don't have children; they keep the food for themselves.

Harmsworth, MATH 117

It has a smaller infinitely many elephants — elephants? elements.

Malinowski, MATH 115

Sorry I'm late. My excuse is that I'm on drugs.

Willard, PMATH 334

I know I said I'd have your midterms today. I had a lot of dates this week. With women.

Willard, PMATH 334

I'm going to play a game with you guys right now... Well, it's not really a game... and its not really with you... so I'm just going to do something.

Willard, PMATH 334

Pretend that we have a button. If we press the button, a nuclear bomb will be detonated with probability 50%. The other 50% of the time, I get a bunny.

Pritchard, CO 456

Your compiler should go "Hey! Whoever wrote that was on drugs!"

Becker, CS 241

What happens when this is 0? (points to the denominator) The world blows up! Apparently Chuck Norris can divide by 0, but you can't.

Chisholm, STAT 230

profQUOTES

More of them!

I hope you didn't write any of that down. That was supposed to be my Monday joke.

Faber, CLAS 201

Like the country of Alberta. (A few laughs.) You were supposed to laugh when I said Alberta is a country.

Faber, CLAS 201

Assume with loss of generality. Now wh... (gets cut off by laughter of class) Man, math students are easily amused.

Forrest, MATH 147

1, 2, 3,... oh, I can't count that high.

Cormack, CS 241

I can't read my own notes.

Cormack, CS 241

(referring to an article that stated the chance of getting struck by lightning is one in a million) But of course you can't run around with a golf club in your hands outside in a lightning storm yelling "one in a million, one in a million, one in a million, I'm golden!" The chances you are struck are much higher than when you stay at home in the basement playing Halo 3.

Kenyon, PHIL 145

1 word is worth 0.001 pictures.

Panjer, ACTSCI 331

Don't quote me on that, the only time I'm ever quoted in *mathNEWS* is the quote saying "I'm never quoted in *mathNEWS*".

Panjer, ACTSCI 331

So now you've got this bag of giggling snakes. The biologist takes the snacks out, I mean takes the snakes out.

Brown, STAT 241

For me to search it and download it onto the machine is pretty easy but apparently it's illegal.

Mavaddat, CS 251

The textbook example uses hamburgers. (sleepily) Cups of coffee seem more relevant to me at the moment.

Saunders, ACTSCI 371

(pointing to people in the front row with Tim Horton's cups) I'm so jealous of you all.

Saunders, ACTSCI 371

Does that answer your question? Okay, it doesn't answer it, but it gives you a warm, fuzzy feeling.

Buhr, CS 343

It's massively complex and only engineers understand it. They only do it that way for job security.

Buhr, CS 343

The midterm is now out of 50, before you decide to go slash your wrists or something.

Anonymous

By all means, you can come to me for help and I'll pretend to know what I'm doing.

Wolczuk, MATH 237

(Referring to a saddle surface.) You might better recognize this as... a Pringle.

Wolczuk, MATH 237

(Trying black marker) Observe... observe... observe that the rest of the lecture will be done in blue.

Wolczuk, MATH 237

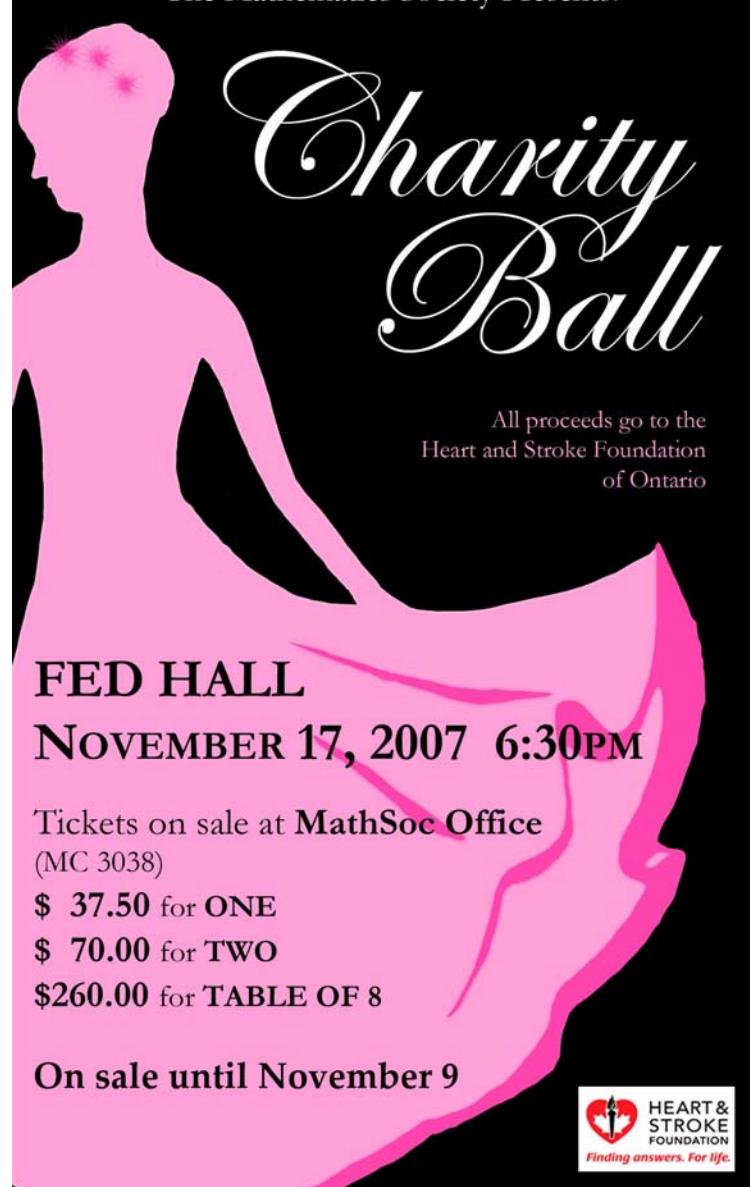
So what we're going to do next class... no, don't look at the clock!

Wolczuk, MATH 237

This is an amazing fact that proves that math is wonderful. It does!

Wolczuk, MATH 237

The Mathematics Society Presents:



Charity Ball

All proceeds go to the
Heart and Stroke Foundation
of Ontario

FED HALL

NOVEMBER 17, 2007 6:30PM

Tickets on sale at **MathSoc Office**
(MC 3038)

\$ 37.50 for ONE

\$ 70.00 for TWO

\$260.00 for TABLE OF 8

On sale until November 9



HEART &
STROKE
FOUNDATION
Finding answers. For life.

Why would you not want to be bitten by a vampire?

Seriously, vampires are totally sweet. You get all sorts of really great powers. You can fly, you live forever, you get an attractive accent, and you're really strong and such. Not to mention that the opportunities for clever puns are endless. So why do people in movies always run away from them? If I were attacked by vampire, you can bet I'd bare my neck for him.

Thor

Old School Gaming Tips

Earthbound

When people think of old school RPGs, the first things that comes to mind tends to be a story of swords and magic, of dragons and dungeons, and possibly a destroyed hometown, too. Well, *Earthbound* is nothing of the sort!

Earthbound starts in the town of Onett in 199x. A meteor lands nearby, prompting the main character (Ness) to check it out. From there, he is told by a bee from the future that his fate is to save the world from the great evil. So, with his trusty baseball bat, he embarks on a journey to find his allies and save the world! (All while doing things like enjoying concerts, destroying cultists, and even listening to random fart jokes and Beatles references.) Here're some tips for you to enjoy the game further!

- Early in the game, you can go to the Library to get a map (free!). It's pretty handy if you're a first-time player!
- Right next to the library in the trees is a path to your secret hideout. (It's guarded by the scruffy kid.) If you talk to one of your friends in the hideout, you get a Mr. Baseball cap, which you can't get normally till the third town!
- Bats are always better than Yo-Yos. Their hit rate is much, much better. However, the Casey bat blows. It has the highest power, but misses too often (a reference to a baseball poem by Ernest Thayer about a batter called the "Mighty Casey" who strikes out).
- You don't need to call your dad to get money deposited in your ATM. Calling him once in awhile is useful to save, though. Your dad also calls you if you play the game too long (telling you to take a break).
- In the town of Threed, after you finish that part of the quest, you can visit the hospital and find an "Insignificant Item" in one of the drawers. It has no use, and sells for \$1. However, taking it to the Hospital in Twoson will find you a boy who will give you a magic truffle for it.

Earthbound is truly a quirky game that is worth a play, even today. Try to find one legally if you can. (Otherwise...) Be sure to do the love quest for the sesame seeds in the desert!

Megaton Panda

Campus Question

What's the best way to kill a zombie?

Force it to read Imprint.

InsideR
2A mathNEWS Writer

Head shot, mudda fugga!

Angelo

What if life were more like Kingdom Hearts

- All ships will be made out of Lego blocks. Operating the ship is simple; however, using the guns will result in Carpal Tunnel Syndrome. That is, until you find the auto-fire command.
- An oversized key is the world's most dangerous weapon.
- Said key will select who can use it. Making things like driving a car or getting into your house difficult if the key doesn't like you.
- Your species is entirely dependent on the area that you are entering. Anytime you enter an area where there are no humans, expect to be turned into a cute, more cuddly version of the local animal life.
- Whenever people lose their memory, they will completely lose all knowledge of people. Despite their amnesia, they will always say your name and then ponder how they knew it.
- Being heartless is akin to being a monster, and not a lawyer.
- Removing people's hearts will make them monsters that crave hearts. A lot less dead than other people who've have their hearts removed. Unfortunately, removing someone's pants doesn't have the same result.
- Putting a symbol on anything can make it an enemy.
- Any stress someone has with their girlfriend, boyfriend, personal life or otherwise menial problems can easily be resolved by beating the shit out of them with a large key.
- People don't ask questions about the origins of things. Keyblades are made out of key and blade, heartless are those without hearts, and Gummi ships are made out of... I have no idea.
- Walking around blindfolded will give you access to the most potent of magic but will leave you vulnerable to walls and items on the floor.
- Most problems can be solved by mashing the X or Triangle button.
- Sometimes when trying to talk to people, you end up stabbing them with your keys.
- Death is not the end. Killing your enemies doesn't mean that they won't spontaneously reappear without a prompt or reason.

Angelo

Dating Advice from the Permanently Single Guy

Since we lost the Single Guy, I have decided to step up to the plate and help those in the throes of passion. I am the Permanently Single Guy! So let's get to the letters!

dear, the single guy

my bf has been 2 busy w/ midterms to spend time w/ me. i want him 2 do well in like scool but like want to be with him 2. what should i do? thanks! hugglez

ignored

Dear Ignored,

Why don't you date me? I'll never ignore you! Please! I'm so lonely...

The Permanently Single Guy

Horroscopes

ACC

You fear the worst, and it's likely going to happen. Whatever frightens you should be avoided. While running, don't be afraid to pick up a stranger at Mel's. True love has all-day breakfast and doesn't call you back, ever.

Your lucky number is one egg fertilized.

ACTSCI

Some people go through life walking, but you enjoy a hearty sprint. Run face first into a wall to show everyone around that you are unique and require reconstructive surgery.

Your lucky number is twelve bumps on the noggin'.

AMATH

When the pressure begins to build, become amorphous. Stick it to evolution as a blob since you can do all sorts of revolting and disgusting things.

Your lucky number is over two hundred missing bones.

BBA/BMATH

Quoting Shakespeare while your face is on fire can alleviate your built-up feelings. Letting them out in a healthy manner is overdone: do something self-destructive to add scarring burns to your list of great mistakes.

Your lucky number is 451° Fahrenheit, the temperature at which faces burn.

C&O

Public nudity is often frowned upon, but you are free spirited and like having a criminal record. You are one of the few people that realize that freedom can be emulated with a lot of beer and songs about promiscuity.

Your lucky number is zero campus police officers willing to chase you.

CS

Be sure to avoid attending CS 246 lectures while juggling three babies and a chainsaw. It may seem like superstition to you now, but sometimes people believe stupid things for good reasons.

Your lucky number is three fewer whiny brats in the world.

MATH/BUS

Getting investment tips from an apothecary is a good way to end your short-term problems. Just remember that all solutions eventually open up three times as many problems and should be used with a grain of illicit substance.

Your lucky number is five successful crime operations.

OR

The stars hold the answer to your future. Spend the rest of your life staring at them while eating Cheetos. Convince yourself that something meaningful happens as recourse. Fear my eggplant. Your lucky number is 17 simultaneous death sentences induced by star gazing.

PMATH

Should you cross swords with an invincible data construct, remember that the pen-fifteen is mightier than the sword. Especially when you are trying to overcompensate.

Your lucky number is one gross exaggeration.

SE

Home is where the heart is. Find a homeless person and play 'operation', if you catch my drift. Thus, your home can be anywhere you want it to be. Should the hobo return as an undead, you can only destroy it by finding it a respectable job.

Your lucky number is forty battallions of your own zombie hobos.

STAT

Wholesale prostitution may seem to be an acceptable business practice to your best friends, but you have your doubts. Don't try to be someone that you're not. It's already bad enough that you fail being someone that you are.

Your lucky number is five minutes until your next identity crisis.

UNDECLARED

The elephant never forgets... to kill you! These mighty beasts sense you are in their territory. Make haste, for the mice are moving into position to secure your escape.

Your lucky number is 10,000 lbs more than you.

AHS

Don't let the past get to your head. Winning a battle does not mean that you have won the war. Take no prisoners, and destroy all in your path. Honour is nothing more than a word made entirely out of overused letters.

Your lucky number is several million dollars in damages.

ARTS

Prove to everyone that you are a natural leader by doing everything that you are told to do. Don't shy away from the opportunity to redefine yourself, even if it means casting a few virgins into a volcano.

Your lucky number is ten pleased evil deities.

ENG

After every storm there is a rainbow. Oddly enough, after every kegger there is a hangover and a stranger in your bed. Pretend that you don't remember what happened, and then shower for several years.

Your lucky number is a two at ten, but a ten at two.

ES

Those who cannot laugh at the past are doomed to repeat it with a frown. If you didn't get it right the first time, then you likely will not get it right the second time. They say "third time's a charm"; however, you are the exception that proves the rule.

Your lucky number is an error that approaches infinity.

SCI

Life is a buffet and no one gets a doggy bag. Fill up your plate with as much as you can and worry about eating too much when you throw up on someone's shoes. The present is the best time to ignore the problems of the future.

Your lucky number is a twenty yard blast radius.

AngelED

Why was nobody here for production night?

I blame all those evening courses. Simultaneously.

mathNEWSQUOTES

We were going to write a *mathNEWSQUOTES* article for all the zany things we say during production night, but then we realised you should have been here! See you next week!

The *mathNEWS* Production Staff

gridCOMMENTS

Hmmm... *gridCOMMENTS*. There were a few submissions for the last *gridWORD*. Sorry to Dmitry for misspelling his name... I guess I should have gone with a clue about peas instead. Despite this error, nobody was too confused. (David tried "blackberry's" instead, which works just as well.) Correct solution submitters and their answers to "How will you prepare for the coming darkness?" were: David Connors ("create a portal between the sun and my house"), Graeme Kemkes ("graduate"), and Nick Murdoch ("paint phosphorescent labels on anything I may need").

Congratulations to Graeme Kemkes — you've won this time, and can pick up your prize at MathSoc!

I don't really have time to finish the *gridWORD* I was making for this issue, so I'm reprinting a grid from our archive. This one's from 1985, and I'm pretty sure it's the first one to be accompanied by something like the current *gridWORD* logo. You can still win a \$5 gift certificate to the C&D, though! Complete the *gridWORD* and respond to the *gridQUESTION*: "****", then drop it in the **BLACK BOX**.

Also, Richard (who'll "[get] sunglasses, because if you can't see anyway..."), you're the only one who submitted the Sudoku, so you win by default! You had the right answer, too. Your prize is also in the MathSoc office.

If you want a chance to win the next \$5 gift certificate to the C&D, submit your Sudoku or *gridWORD* solution this week! Just drop it in the **BLACK BOX** beside the Comfy. Pretty easy, eh?

Peter

Solution to last issue's **gridWORD**

profQUOTES

Separated from the pack

Does everyone know what I mean by "countable basis"? It means you have a basis which is countable.

Kuo, PMATH 733

As a professor, I have pictures of you as frosh. You are all very cute.

Liu, PMATH 442

This is the fundamental theorem of Galois theory. Before we look at its proof, we should take a moment to worship it. I really mean that!

Liu, PMATH 442

I'm going in for minor surgery. I'll be back Monday, or I'll be dead.

Goulden, CO 430

Today is Friday, so we'll prove propositions. I don't know why that makes sense, but it does.

VanderBurgh, MATH 135

This is where I get my red pen and put a "-2" on my notes because I made a mistake. Usually by the end of the term I don't have many marks left. This is why I keep teaching this course, because I never pass.

VanderBurgh, MATH 135

I can't just give an example to prove it. Unless I was an engineer. Any engineers in here? No? OK, that's good.

VanderBurgh, MATH 135

*Has your prof said something quotable? Type it up and send it to mathnews@student.math.uwaterloo.ca, or write it down and drop it in the **BLACK BOX** (located on the MC 3rd floor, between the Comfy and the C&D).*

Edgar might not like it, but that's just because he types them up. Everyone else will be happy. And that's a Good Thing.

UW Gamers Music Appreciation Night

Music and rhythm games tonight!

Tonight, November 6th, from 5pm to midnight, in the SLC Great Hall, UW Gamers is putting on a Music Game Appreciation Night!

We will be playing all kinds of music games, including DDR, Guitar Hero 2 & 3, Donkey Kong Jungle Beat, Beatmania, Pop'n'Music, Space Channel 5, Lumines, Every Extend Extra, Taiko Drum Master, and more!

UW Gamers Dude

π^2 years ago in *mathNEWS*

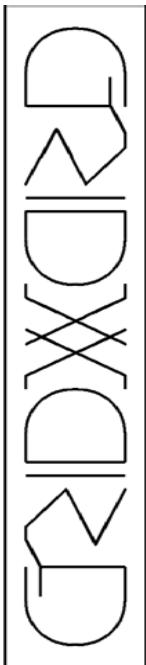
It was our 25th anniversary, and we were publishing on the web.

Tall

1. Point out the direction in what way? (4)
2. Lied about not moving. (4)
3. Because every other way may let up. (4)
4. Took a large weight up to Mr. Kennedy to be heeded. (5)
5. Applaud a U.S. city in a Canadian rail line. (4)
6. A star exploded up by the English river. (4)
7. Mother took the German soldier to church. (4)
11. An uneven sphere is for a strange guy. (7)
12. Wait on about the store. (7)
13. Take David up with eccentricity to avoid it. (5)
14. That child has to open the lid. (5)
16. The street beer went flat. (5)
17. Romeo could have been a poor tennis player. (5)
19. Reflect the child the same way. (3)
27. A year very quiet for the French fruit. (5)
28. Waters the thick soup up. (4)
29. Britain, in two ways, will use atomic power. (4)
30. Stop left at the laugh. (4)
31. Howls at Hudson, et al. (4)
32. A tune with a raised atmosphere. (4)
33. Change in water because of the strange diet. (4)

Wide

1. Part of the back has to reel this way. (5)
5. A hundred hurt Grace. (5)
8. Salmon, in all, drink liquor. (7)
9. How herin lies what position. (5)
10. Softly, there are bugs in my trousers. (5)
11. Many in a mixed role as they age. (5)
14. That guy put a plug on the noodle. (4)
15. Feeds to rotate the seat left. (4)
18. By way of six years. (3)
19. Put potassium in the short boxer's demise. (3)
21. My stomach seems bad around the sign. (7)
22. Take the fish back to the surgeon. (3)
23. Recline, fifty that is. (3)
24. Part of a ship in Quebec. (4)
25. The truck is directed to the weathercock. (4)
26. Depart by the French street. (5)
28. Has Owen checked for the female servant? (5)
31. A year in the finest changed him into an animal. (5)
34. The bull lay around in the sleep song. (7)
35. He set the piece of paper. (5)
36. At least you could get the small blackboard! (5)



Drywaller

“Listen up. Our client isn't picky, as long as each square has the right number of walls surrounding it. Sounds a little tricky, but we didn't get to be the #3 drywall outfit in town by being lazy.”

Also:

- There's a wall around the outside
- They want exactly 10 rooms

This is Drywaller #237.

You can find the solution, plus more puzzles, at euri.ca/puzzles.

Solution to Last Issue's Puzzle

Sudoku

This Issue's Puzzle

4	5	7	3	8	2	1	9	6
6	1	3	7	9	5	2	8	4
2	9	8	4	6	1	5	7	3
5	6	9	1	7	8	3	4	2
7	2	4	9	5	3	8	6	1
8	3	1	2	4	6	7	5	9
3	8	5	6	1	9	4	2	7
9	7	2	5	3	4	6	1	8
1	4	6	8	2	7	9	3	5

			3		2	4	8	
4	2	7					1	
								5
7	1		6	3	9			
6	4	5		1	2			
8								
3			6	5	2			
7	2	9	8					

Your name & answer to the gridQUESTION (see page 13):

Eurica