

math

NEWS

Volume 106, Issue 2

Friday, February 1st, 2008

If and Only If...

Horrorville-Deadenfaulker

Popping Corn

Try our new Fiery Inferno flavour!



Horrorville-Deadenfaulker
SURPRISE!



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lookAHEAD**mathNEWS**

February 1	<i>mathNEWS</i> Issue 2 is uniformly distributed
February 11	<i>mathNEWS</i> Production Night #3
February 15	<i>mathNEWS</i> Issue 3 is exponentially distributed

Feds

February 12-14	Feds Elections
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CECS

Main group interviews ongoing

For upcoming career services workshops see:

www.careerservices.uwaterloo.ca

For employer Information sessions see:

www.cecs.uwaterloo.ca/students/sessions.php

For important co-op dates see:

www.cecs.uwaterloo.ca/students/datesW08.php

Miscellaneous

February 3	Superbowl
February 14	Valentine's Day Buy someone that doesn't love you something to MAKE them love you. Like a puppy. Filled with bees.
February 15	Galileo's Birthday

To all you dedicated MathSoc members

My name is Valerie Fraser and I am your Vice-President, Activities and Services for the Winter 2008 term. I hope you all enjoyed the beginning of term event this past Wednesday, the Whine and Cheese party. If you missed out, don't worry!! We have a term filled with all kinds of fun events. Some things to look forward to will be Name that Tune, So you Think you can do Math, Pints with Profs and a trip to the casino! We also will be having weekly Games Night on Wednesday's and Movie Nights on Thursday's. I would like to get to know as many people as possible, so don't be shy! Come visit me in the MathSoc Exec office across the hall from the MathSoc office. Enjoy the term!

Valerie Fraser
MathSoc VPAS

Interested in CS?*Administration, not the subject*

Hello CSers! I know you probably like CS, otherwise what are you doing in the program? You probably know a good chunk about it. But how much do you know about the decisions that are made behind the scenes that have a profound effect on what you study in your classes, what classes you need for your degree, and other issues than I can go into here. If you want to know more about these things, there is now a solution: email! Head over to MathSoc's webpage (<http://mathsoc.uwaterloo.ca>) and follow the link on the frontpage to sign up for the cs-discuss maillist. You will receive emails pertinent to changes to your program and the status of CS as well as information on student positions for the UAPC (Undergraduate Academic Plans Committee) or other student opportunities to have your opinions heard.

Val

mastHEAD

Prinny, doods! There's nothing better than a new issue of *mathNEWS* right before the mid term and assignment rush. Unless you count studying and completing homework, which is better for your health and not necessarily better than *mathNEWS* in absolute value. Let's not cloud the horizon with trivial technicalities. The theme of this issue was letters that appear in the English language and is brought to you by the letter π .

All in all, we had a lot of fun with our theme. Everyone who survived was very willing to comply and no one will ever find the bodies of those who didn't make it through the night. The survivors were asked a variety of personal questions. One of which was "What type of idiots do you have at home?" which had answers: ebering "Software engineers", 42 "Do psycho, masochistic kitties count?", Megaton Panda "A stupid, loud animal; and a cat", Thor "Functional programmers (non-SE students), DanG "Thor", Impulse Vector "Thor", Static IP "Thor", snipert "Vindictive, inconsiderate, logically-challenged females with pelvic partners in excessive noise", gnleece "Thor", Matt "The normal kind", Peter "High-bandwidth ones, apparently".

Now it is time for we at *mathNEWS* to give thanks. To ourselves. Left overs are given to graphics, who put the Caramel in the Caramilk candy bars. Losers that make me look cool for an inflated self-esteem, midnight where the dark hour appears granting me extra time for my assignments, and Storm Troopers for never shooting Chewbacca.

Michaelangelo 'AngelED' Finistauri "Leprechauns who are always after me lucky charms."

Michael 'perkiED' Perkins "Countably many of countably many different types"

VPA election results

The polls have closed, the results are in. You have a new VPA for this winter and the upcoming fall term. With 61 votes cast in our shiny new online system, the winner is: Dmitry Denisenkov. If you have any question or issues in regards to academics, he's your man. You can reach him by sending an email to vpa@mathsoc.uwaterloo.ca.

Mr. Vote

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Certain oddities have come about over the years. One noteworthy is that people reading the ISSN could be doing something more productive with their time like reading the rest of this fine publication for example. Why they don't just give up now and go elsewhere is flat out beyond me.

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Castor and Pollux: Michaelangelo Finistauri & Michael Perkins

Undergraduate Program Review for the Faculty of Mathematics

Math Students are about to be asked to participate in a survey to assist the Faculty review its undergraduate programs. At UW, programs are reviewed on a 7 year cycle; the last Faculty review was in 2001. As it is acknowledged that “programs” are not necessarily synonymous with academic organizational units, the Faculty of Mathematics has elected to do a Faculty-wide review for all Math Faculty programs, excluding Computer Science. One of the advantages of doing a faculty-wide review is that programs that are not explicitly part of an academic department, such as Math/CA and Mathematical Sciences, will also be included in the study. Computer Science did its own review last year, and so they are not included in this year’s review.

Background

The Council of Ontario Universities has created an Undergraduate Program Review Audit Committee (UPRAC) whose task is to audit each university regarding its arrangements for Program reviews. The UPRAC Audit Guidelines state that the objective of periodic undergraduate program reviews is to assess the quality of the undergraduate programs in that university, including its federated and affiliated institutions, in all areas of study.

At UW, the fundamental purposes of the review process are to help (1) each program to achieve and maintain the highest possible standards of academic excellence, through systematically reflecting on its strengths and weaknesses, and looking forward to determine what actions would further enhance quality in the program; (2) document the quality of the program relative to counterpart programs in Ontario, Canada and internationally, and (3) meet public accountability expectations through a credible, transparent, and action-oriented review process.

Importance of Student Involvement

UPRAC guidelines stress the importance of student feedback in the program review. You may have already been contacted regarding a survey of student opinion, asking all Math faculty students in 2nd, 3rd or 4th year about their experiences in their program of study. The survey is being conducted by the Survey

Research Centre (SRC) at the University of Waterloo, a non-profit survey organization, on behalf of the Math faculty. Results of the survey will be incorporated into the undergraduate program review process, reporting to the Ministry of Education. The information each person provides affects all students, thus it is important that every student complete the survey.

Students in programs being reviewed will be contacted via email to participate in the confidential web-based survey. The survey will be open on Jan. 29, 2008 and will run for several weeks. Participation in this study is voluntary; however, please note that all your answers are important in investigating how students feel about their study programs. If you participate, with your permission, your name will be entered into a draw for one of four prizes of \$50 gift certificates from Food Services. Below is a list of the programs that will be reviewed this year:

- Actuarial Science
- Applied Mathematics
- Bioinformatics (with Biology)
- Biology and Bioinformatics (with Biology)
- Business Administration and Mathematics (jointly with WLU)
- Combinatorics and Optimization
- General Mathematics
- Mathematical Physics (with Physics)
- Mathematics/Chartered Accountancy (jointly with Accounting and Finance)
- Mathematics/Business Administration (jointly with WLU)
- Mathematics/Teaching Option
- Mathematical Sciences
- Operations Research
- Pure Mathematics
- Scientific Computation/Applied Mathematics
- Statistics

Jack Rehder

Executive Assistant, Faculty of Mathematics

The FASS Theatre Company proudly presents:

FASS 2008: Global Warming: Kiss Your FASS Goodbye! at the Humanities Theatre, Hagey Hall, University of Waterloo

This year’s home-grown musical comedy from the folks at FASS (Faculty, Alumni, Staff and Students) at UW, Global Warming: Kiss Your FASS Goodbye! takes a lighter look at a very serious subject. Pitting sincere environmental activists of every stripe against the powerful forces of Big Business, the show also manages to find a lighter heart and the humour involved in trying to do the right thing.

FASS also involves cameos from UW & Waterloo life. These include:

Thursday Feb 7th 8pm: The Don Cameo with the Dons represented by Alanna Borris and Matt Colautti from MKV.

Friday Feb 8th 7pm: Deep Saini, popular Dean of ES

Friday Feb 8th 10pm: The Feds Exec with Kevin Royal (President), Del Dereira (VP Finance), Jonah Levine (VP Education), and Darcy Higgins (VP Internal)

Saturday Feb 9th 8pm: Andrew Telegdi, MP for K-W

The FASS Theatre Company is serious about having fun — we’re a live cartoon on stage! We’ve been entertaining UW with variety and musical comedy since 1962, making us UW’s long-

est-operating amateur theatre group. While the most fun occurs in January when over 100 cast and crew rehearse and prepare the show just in time for February, you can join us in our social events all year round! We welcome anyone and everyone and each year we see new friendships created and old ones renewed. If we’re not too busy laughing at ourselves in rehearsals, trading jokes at writers meetings or sharing donuts backstage, you’ll probably find us going out to a movie or throwing a famous FASS Party!

Performances Dates: February 7th & 9th at 8pm, February 8th at 7 and 10pm.

Humanities Theatre, Hagey Hall, University of Waterloo, Waterloo, ON

Tickets: \$9, \$7 on Thursday

For tickets, please contact the Humanities Theatre Box Office at 519-888-4908.

Box office open 12pm to 5pm, Monday to Friday.

Cash, Debit, Visa, Mastercard and American Express accepted

For more information, please contact: Russ Wong, Director, director@fass.uwaterloo.ca or Robert Burke, Producer, producer@fass.uwaterloo.ca

CSC Flash

What is this column anyway?

So us at the CSC (that's Computer Science Club for the uninitiated) were cleaning out our library when we found a 1992 report on our records storage by someone at UBC. While most of the actual content of the report was useless as we've radically changed things in the past 16 years, we did find a few interesting things in the article. Among the artifacts were an old copy of the constitution, a description of a CSC-PMC event that will be covered later in the article, and a description of the organization. Included in this organization was a position called the "CSC Flasher" whose duty was to write a column in *mathNEWS* entitled the "CSC Flash". However, the document was rather unspecific about the contents of this document, and looking at old *mathNEWS* issues from around the time of the document the column seems to oscillate wildly between the writings of our maniacal chair-being Calum T. Dalek and the next few upcoming talk abstracts concatenated.

Some history

As best I can tell, there used to be a CSC-PMC pentathlon consisting of the following events: a cake-baking competition, some form of physical sport (it's been snow soccer or road-hockey the times I've found it mentioned), games of Chess and Trivial Pursuit, and "Othello". It is unclear if this last item is also the game, or which club could better perform an act from Shakespeare's classic work.

Dating Advice from the Single Gal

Dear Single Gal,

What the hell is wrong with women? They're all crazy! Every girl I've ever dated has been so crazy. Every time we go out they act clingy and jealous. If I leave them alone for even half an hour to go hit on other girls, they get upset. And they're never ever happy. I was dating this one girl for a few months and, okay, so I forgot her birthday. I made up for it by getting her World of Warcraft a week later and she flipped out. Okay, maybe I played it more than she did — but it's the thought that counts!

Geoff

Dear GerK,

Hmm... all the girls you've dated are crazy? Really? Every single one? Poor, poor you. Did you ever notice that the only common denominator in each of those scenerios is you? So either, you have the worst taste in women. Or, more likely, you are the crazy one. You don't understand women at all. If you're telling me about hitting on other girls, forgetting their birthdays and buying them gifts you know they don't want, it makes me wonder about everything else you're doing that drive women up the wall. Are you dating their sister? Telling them they look fat? Sleeping with their mom? Just because your hormones are ready for dating doesn't mean you're mature enough for dating. Maybe you need to take a break from dating, hang out with your 'boys', and grow up. Learn to take some responsibility until you realize you can't treat people that way. Even crazy girls have feelings.

The Single Gal

Dear Single Gal,

Okay, so I was at the Bomber and I met this really really hot

The gauntlet is thrown

Since this Pentathlon sounds like fun, I, with support from Calum, hereby throw down a gauntlet for the PMC to pick up, challenging them to a Pentathlon that fits the description above. Bring it, Pure Mathies. Bring it.

Other CSC happenings

I think we got them all in the *lookAHEAD* this time around. Some other things we're up to are petitioning MEF for upgrades to our aging mirror and disk servers. We also have a new shipment of official Ubuntu 7.10 CD's, get them while they're fresh. Our office is usually open, so feel free to come by and chat about topics in computation or buy some low priced pop or juice.

Recruiting drive

I almost forgot! Ending the day this issue comes out, the CSC is running its termly recruiting drive: for the low low membership price of \$2 you not only receive the benefits of membership (access to our library, systems, office supplies) but also 4 free cans of pop. We'll either be at a table in the 3rd floor MC lobby, or come by our office.

Edgar Bering
CSC Secretary

guy. We danced all night, made out, and then went back to my place and he "popped my queue". I gave him my number and he said he'd call. But it's been 3 weeks. And he hasn't called yet! I can't believe it. I hope he's okay. Should I call the cops? I looked him up on Facebook and his picture is with some other girl. Which must mean he's missing — or else why would he have a picture with some other girl when he's obviously into me! I'm really worried about him, even if he's paralyzed for life, I'll still love him!!

Madeline

Dear Mad Woman:

Hey, do you know Geoff? It sounds like you guys would get along great. Listen girl, I've got some good news for you and some bad. I'll start with the bad news: he's not gonna call. He's not. He obviously wasn't as into you as you were to him. You were used. He used you for one drunken, hot night of passion and then moved on. It hurts, right? Well it gets worse. Stalking him on Facebook and obsessing about him will only drive you crazy and prevent you from meeting other hot guys. There is nothing you can do now. He's totally gone. Forever. And ever.

Oh? The good news? Umm, well at least the sex was good? Right? NO?!? Oh. Well then, I've got nothing.

The Single Gal

And the *mathNEWS* Editors said

Let there be filler!

And there was and many people felt as empty as this space would have been without these words. Are we glad for the words or are they merely patchwork over a rip in the pants of satisfaction?

Interesting Math

The Paradox of Banach-Tarski

Q: What's an anagram of Banach-Tarski?

A: Banach-Tarski Banach-Tarski.

Here's some interesting math you may be familiar with: the Banach-Tarski paradox. Simply put, it states that a sphere can be split (into five pieces, specifically) and reassembled to produce two identical copies of the original sphere. By reassemble here, I mean only translations and rotations, no altering the shape or size in any way. Seems weird, no? Put in terms of volume, they showed $1 = 2$. Not quite so, but it's still intriguing. A more general form of this paradox implies a marble can deconstruct into pieces and then put back together to cover every point in the sun! Another corollary of this theorem shows that it is possible to cut a sphere into n pieces, remove one, and reconstruct an identical sphere with the remaining $n - 1$ pieces.

As you may know/learn, this paradox is made possible by the Axiom of Choice (In actuality, we don't need something that strong — it has been shown in recent years that all we need is the ultra filter lemma, a weaker version of said axiom). The axiom allows the construction of non-measurable sets. For those of you who know what a measure is, and it turns out this implication is precisely what allows this weird phenomenon to occur, the pieces that make up the sphere mentioned above are non-measurable. For those interested: this paradox shows there does not exist a finitely-additive Banach measure defined on all subsets of n -dimensional Euclidean space for $n > 2$ (there are other properties I won't mention here). The Banach-Tarski paradox shows that for some sets, there really isn't a way to define "volume", so we don't end up proving $1 = 2$ (whew). It might also be interesting to note that this paradox was brought to light in an attempt to show why the Axiom of Choice should not be accepted, but ironically mathematicians instead found the paradox intriguing, insisting it supports why the axiom *should* be accepted!

It turns out that this paradox only exists in the mathematical sense; you wouldn't be able to decompose a sphere and produce

two spheres of identical size, shape and density in real life. First of all, there is no way to generate where to make the "cuts", the theorem only shows that such cuts exist. It may very well be the required cuts are physically impossible to reproduce. Secondly, the paradox assumes "infinite density", or rather, that there are infinitely many points in the original sphere. These points are moved around through bijections to the copies; in reality we are (presumably) restricted as there are only finitely many atoms or sub-atomic particles to play with. The mathematical version relies on the property of infinite divisibility, which does not occur physically. Then there's always the issue of cutting these particles in pieces, as the math tells us we may have to do. Whew, that's fortunate, it would be strange if this paradox could take form in the real world, would it not?

This concept of mathematically infinite points or infinite divisibility is what allows for the paradox to occur. I'll attempt to make you a believer if you aren't already. Consider the integers. We can make two copies of this set, E_1 , the set of odd numbers, and E_2 , the set of even numbers. How are these copies? We simply need to create a function that can map elements from the E sets to the integers. I'll leave this relatively simple exercise to the reader. Notice if we had only a finite number of elements in our original set, we could easily create two copies of similar "length" or size, but of lesser density. We don't run into that problem in the Banach-Tarski paradox because of the "infinite density" we have.

Well that's all for this issue - I know it's shorter than usual, but I'll try to make up for it next time. To tide you over, here's a nice problem for you to work on!

Vince's Problem of the Issue: Suppose A, B, C are lattice points in the plane. The triangle ABC contains exactly one lattice point in its interior, X . The line AX meets BC at E . What is the maximum value of AX/XE ?

Vince Chan

Fairytales from the MC

Snowwhite and the 7 TAs:

There once was a princess names Snowwhite (note: the name does not tend to suggest the princess's ethnicity in any way. We're culturally diverse, right?). One day, her rez don sent her to the MC, where she got lost, and it was very scary (seeing as it was the MC, where it's easy to get lost and it can also be very scary if you're not a math student). Luckily, Snowwhite found a nice little room with seven little TA's who helped her on her assignments and thus saved her life.

Hensel and Pretzel:

Once upon a time there was a couple of first-year twins named Hensel and Pretzel (Hensel was the guy, in case you wandered). They were sent to the MC by their evil ___ instructor (substitute ___ for any class you had with an evil instructor), and subsequently got lost as well. Luckily, they found a wonderful room full of candy, and they ate it all. Then they found out the room was in fact the C&D. They were forced to work there to pay off for all the candy they ate, but on the bright side they weren't cooked by a witch.

Little-Pink-Tie-Hood:

There once was a girl named Little-Pink-Tie-Hood because she

was always wearing a pink tie and she had a hood too. She got lost in the MC while trying to visit her calculus instructor to ask some assignment questions. The big-bad-engineer came by and ate her and her instructor, and her assignment. Luckily a TA came by and confused the big-bad-engineer using complex derivatives and linear systems (which could be solved by a first-year math student), so the engineer de-ate everything (you know what I mean, I'm just trying to get a PG rating). Later everybody joined Snowwhite, Hensel and Pretzel in the comfy lounge and had a party. You were not invited.

Sleeping Beauty:

Once upon a time, say $n!$ years ago, some girl attended a ___ lecture (replace ___ with any boring lecture you've had) and fell asleep. She's been asleep ever since, and came to be known as the sleeping beauty, because her face was covered and she was assumed to be good looking by silly "always-look-on-the-bright-side" people. One day a prince tried to wake her up by kissing her, but he was later arrested for sexual harassment.

The moral of these stories is: always carry a compass while in the MC so as to not get lost.

O'Blade

Horrorscopes

The horror... the horror... scopes

ACC

Good things come to those who wait, and then they are immediately confiscated by those who account. Take possession of all the good things in other people's lives and lock them up in an asset vault. If you happen to take some stuff for yourself in the process, only you will know. Be sure that you can trust yourself not to blackmail yourself.

Your lucky number is 6,602,224,174 (estimated) people with nothing good in their lives.

ACTSCI

Once you achieve immortality, get one of your friends to sell you an infinite life annuity. Make money while the ones that you love slowly grow old and wither away to nothingness. If it becomes too much for you to bear, you will have no choice other than to use **the code**. UP UP DOWN DOWN LEFT RIGHT LEFT RIGHT B A SELECT START.

Your lucky number is 5 levels skipped.

AMATH

The moon is in hibernation and Libra is watching you shower. Closing the curtain can protect you from everything except infrared scanners. Use cold water to keep your overall body temperature low. Hypothermia is but a small price to pay for a little bit of privacy.

Your lucky number is 3 degrees Celsius.

BBA/BMATH

Take a break from your studies and pick up a good book. Now is the best time to catch up on your reading. Improve your business lexicon with the power of your mighty brain. Don't learn certain words like 'synergy' because they will absorb all other words until it's all you say.

Your lucky number is 1 word to rule them all.

CM

Although your day has started out poorly, you recognize that there is room for change. Take the bad things in life, wring them by the neck and then hide the bodies. Use the following police investigation as a pretext to work on your outdoors skills and try to unlock an achievement by getting ten headshots in less than five minutes.

Your lucky number is 50g.

C&O

You will be surrounded by people with opposing points of view. Toggle your life's camera to see things from their eyes before coming the conclusion that they are all idiots. Feel better about yourself and stick to life's default settings.

Your lucky number is one opinion worth listening to.

CS

Your arch-nemeses, assignments, have made their appearances, and you find yourself in a struggle against time. Increase your personal clockspeed to handle the challenge, and if the need arises, you'll have to go Super Saiyan. Spend the next three seconds flying around incredibly quickly while things blow up.

Your lucky number is 7 billion words per attosecond.

MATH/BUS

Romance may be in your future, and it may or may not be from someone you know. This person may not be a mouth-breather and may also be highly susceptible to cults, drugs or some arrangement of both. You may or may not return the feelings for this person.

Your lucky number is nine uncertainties.

OR

Start your day off with a balanced breakfast to help you outrun a polar bear that followed you home. Call a friend slower than you over for a healthy race. Don't brag when you beat them. Be sensitive to their feelings as the bear devours them and gains wicked Atma points.

Your lucky number is one sated bear.

PMATH

You find yourself questioning whether or not your friends are good ones. To resolve the issue create a blog and keep track of the people who read it and leave comments. Anyone you catch posting is not worth your time; however, the people that start avoiding you may be worth trying to win back.

Your lucky number is seventeen rants about your friends.

SE

An old friend is going to be stopping by for a brief visit. Expect melodrama to follow after they reveal a dark secret from your tormented past. Prepare a speech that will make the circumstances of the event seem tragic. After you convince your loved ones that you are a victim to circumstance you can count on at least one of them calling you a douche.

Your lucky number is thirteen episodes of drama.

STAT

Don't be surprised when you look up your family tree to find a mysterious fortune. Take a trip through random jungles and ancient ruins in an effort to find them. Become paranoid about everyone you know: they are all out to get you.

Your lucky number is negative thirty friends.

UNDECLARED

Don't overuse the word hippopotomonstrosesquippedaliophobia around people afraid of big words unless they owe you money. Remember: it's business and nothing personal. This will become more apparent when you wake up naked in an alley with no money.

Your lucky number is 100% nudity.

AHS

When the going gets tough: walk it off. No matter what life throws at you, you manage fine. Your resolve will rub off on the people near you until they realize that they have a bus pass and don't need to walk anywhere anymore.

Your lucky number is another one riding the bus.

ARTS

Friendship and social activities will start to have more importance to you over the next few days. Take advantage of this by getting drunk every night and playing Guitar Hero 3 while everyone in the MC is doing actual work. This is thanks to Jupiter's relationship with your mom. They are good friends.

Your lucky number is 1 mind in the gutter.

ENG

The mighty ones have offered you a sword to cut your own path through destiny. Take your mighty phallic symbol and cut a swath through to the POETS entrance. Waiting in line: \$35. Getting your first drink of the night after slicing through a queue of NPC's: priceless. Do you really think they'd charge you after killing all those people?

Your lucky number is five POETS staff afraid of you.

ES

To be in your major is to be plagued by a constant need to nag other people about the environment. Overcome the stereotypes

of being a jobless hippie getting a job and by bagging my groceries. You can preach your environmental garbage to me then when I buy an environment-friendly grocery bag.

Your lucky number is 97 cents for a shopping bag.

SCI

You should never play with someone's heart while it's still in their body. Spare your significant other the torture by ripping their heart out using your bare hands. Your relationship will grow to new levels after that and you'll also gain a spiffy new hacky sack.

Your lucky number is 14 heart beats in your hand.

AngelED

Conversations with Idiots

You can't always be right...

A while back, I was having a conversation with someone regarding the atmosphere. Let's not go into the details of how the conversation turned to this, I'm a nerd so the conversations I have wouldn't be the kind you'd normally expect to hear about. The person I was talking to, whose name escapes me (it was probably Rear-Admiral Ass-Master), had some odd opinions that were actually quite interesting to think about, sadly enough.

The conversation pertained to different temperatures at different levels of the atmosphere. I mentioned that the upper layers of the atmosphere were colder than the one that most humans inhabit. Rear-Admiral Ass-Master argued that hot air rises and; therefore, the upper layers of atmosphere must be warmer. Let's think about this for a second.

- We'd all be dead – and how! Assuming that hot air rises and will always be hot air (i.e. saying “to hell with the laws of thermal dynamics”, no transfer of thermal energy), then all of the air in the world will heat up and rise. One of two things will happen. The first is that all oxygen will rise until there is so little oxygen in the immediate breathable area that we asphyxiate. The second is suppose we will have breathable air, the temperature of the air will become infinitely hot. Causing a nasty-painful death.
- Heat transfers – let's construct a more realistic model, assuming that we can survive with a minimal amount of oxygen and are also impervious to drastic changes in heat (as with the local habitat). First of all, there would be no winter. Secondly, there would also be only fire and lava. The world would definitely be receiving an unbounded amount of energy which we would hypothetically survive until the world blows up into a sun or star gone super-nova.
- Being right about A implies you're right about B – Rear-Admiral Ass-Master fails to realize that a single fact is an insufficient basis for realistic modeling. This is also something that most movies have problems with. Take, for example, “The Day After Tomorrow”. Yes: climates change. No: climates do not change after two days to the point that half of the world is destroyed. You can be right about one fact, and this fact can be entirely valid; however, life can tend to be more complicated than a single fact can be used to forecast.

Now what makes Rear-Admiral Ass-Master such an Ass-Master is not that he didn't know the fact or realize that there was a flaw with his logic. His problem was that he was unable to realize that he could potentially be wrong. Having an idea is one thing, not realizing other ideas can still be valid is a problem. Have fun going down with the ship, Rear-Admiral Ass-Master.

AngelED

Microsoft to purchase Faculty of Engineering

REDMOND, Wash. (mNP) - Microsoft announced today that they are purchasing the University of Waterloo Faculty of Engineering for 1.2 thousand dollars. Under the new agreement, students must sign a document forcing them not to use a non-Microsoft product where there is an equivalent Microsoft product available. In return students in the Faculty of Engineering get 5% off all Microsoft products. Many engineers applauded this purchase. “It has always been said that our faculty wants to make out with Bill Gates. Why not make it official?” a seventh year engineer said of the decision.

Not all engineers; however, are happy with the decision. An engineering student recently started a Facebook group entitled, “I'm an Engineer and I run Linux on my Mac and I don't want to use Windows.” In an interview with *mathNEWS*, the founder of this group said, “Just because our faculty made [Windows] Vista the great operating system it is today, doesn't mean that we should be forced to make Windows Seven.” This group currently has two members.

In addition to the requirements regarding Microsoft products, the Faculty of Engineering will create courses based on Microsoft's C#, use Microsoft's server exclusively, and use Windows Live Search. Microsoft has decided; however, that engineers may work for companies other than Microsoft. “This was a contentious issue. We wanted the engineers to have freedom to work wherever they want so we only added the condition that if a student works anywhere outside Microsoft, he or she is required to give all the source code and other intellectual property that company possesses to Microsoft,” a Microsoft spokesman said.

With this purchase, speculators worry that other faculties at other institutions may be purchased by various organizations as well. One speculator even went as far as saying, “What's next, the Faculty of Environmental Studies being purchased by Greenpeace or the Faculty of Arts being purchased by a local insane asylum?”

Anonymous Coward

Case study: Thor

“Hawaiian pizza is God's punishment for an unclean world”

Although we have only been writing for *mathNEWS* for a single month we have observed the apparent insanity of many of the other writers, especially Thor. The following is the evidence we present as a warning to all those who dare to write for *mathNEWS*.

- “I hate people who use operating systems other than Windows Vista.”
- “Python is the best language since sex.”
- “I have 4 GB of RAM, I don't care!” - on Windows Vista
- “You are Torrenting faster than Jesus himself.”
- “Why do I not have your life?”
- “Every time I use .NET I praise the Lord.”
- “I want Bill Gates to do bad things to my body!”
- “After Jesus, Lazarus is my favourite Biblical zombie.”

Will this blatant disregard for common decency continue?

Find out next time on *mathNEWS*.

Static IP
Impulse Vector

Mischievous morals

A mathie's guide to better living through redefinition

Morals are interesting things. Major religions would have you believe that the only way to attain a wonderful, peaceful afterlife, an upgrade in resurrection, or to have your soul taken up to some alien space ship to see the Star Wars: Episodes VII through IX, is to be good. There is a huge amount of disagreement on what this entails, but if you look very closely, being good and being moral are two different things. Morals are defined by the religious beliefs and that's how you get into your afterlife du jour. We mathies know how to define things for our own amusement, so I say we have the power to be moral however the heck we choose, because we know how to redefine things.

How do we accomplish this sacrelicious task, you ask? Very simply, first let's set up the domain upon which we want to value our actions. Say for the lack of a more interesting domain, let's pick sex. We're going to qualify all actions based on their likelihood of increasing our odds of having a sexual encounter with our gender of choice. Dancing rates very highly, and so does talking dirty. Being shy and introverted, not so much. Going to parties and making a drunken spectacle our of yourself fares very well too.

This is the fun part. Using this system, let's rate the "moral" behavior of nuns. They wear full length body covering robes all day, are kind to children and the elderly, and pray and quote scripture all day. Worst of all, they take a vow of chastity and pledge themselves to an immortal, invisible dude who sits on high somewhere. What blasphemous, amoral people these are! Hardly any sex! None in fact. Won't be seeing any of them in this system's afterlife.

How about God then? While technically (s)he wouldn't worry about an afterlife, but should be interesting anyway. Genesis, "Be fruitful and multiply" said the mighty man. That almost sounds like a pimp, which rates very highly on this scale. Adam and Eve, made naked and allowed to do whatever the heck they want, very good points. The Lord is my Pimp indeed! Last but not least, the virgin Mary. No elaboration needed on that account, that's for sure. God would be very comfortable in this alternative view.

Wintereenmas has just passed with its flurry of gaming joy and cheer, so lets try that instead. Being moral entails staying true to gaming. When thou has sinned, thou shalt repent by gaming. When thou has triumphed, thou shalt celebrate by gaming and leveling up. Thus spake the Gamer Gods, and so forth. I, alas, while being a gamer in spirit do not rate highly on this scale. Blessed are the gamers, for they shall be entertained for all days. The afterlife would probably entail having all the best games of all time available for all, with infinite continues for everyone.

Do you bring a portable system with you when traveling? Excellent! Lot's of brownie points there. Are you often thinking gaming thoughts? Marvelous! I could go on, but I've run out of things to question, but the point is made.

Lastly on this tour of redefinition, I'm going to expound my personal system. It is a simple one. Actions are deemed more moral if they earn me more cheese. Tasty, tasty cheese. All is well, when cheese comes my way, for I know that it is a gift from above. Or below. Or wherever you want to end up.

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Fox News attacks Children's Television

Children's Television claimed to show full frontal nudity

Fox News stirred up a firestorm last week with its report entitled "Children's Television Too Risqué??" Experts from every field weighed in on the issue, which centered around the many naked characters in children's television and their constant physical contact with other characters. One such character under fire is Barney, the purple dinosaur whose claim to fame was a TV show by the same name. **Barney and Friends** was a thirty minute show that comprised of Barney with three or four kids singing and dancing while learning about topics like recycling and Egypt.

Sounds educational and harmless? Think again. Fox invited a relatively unknown author of self-help books who denounced the show as nothing more than a half hour of perversion. She went on to explain that the show involved a fully nude Barney who loves to hug children, which should be stopped and investigated by authorities for mental instability.

Similarly, other children's shows have also come under fire, such as Sesame Street (Big Bird, a well-loved character, is reportedly male with a very girly voice, while being completely nude as well.) and Arthur (where women are apparently portrayed as either tomboys or money-loving gold-diggers) are also under investigation by the Fox News team. The author admits; however, that she has not yet watched any of these shows nor does she have any plans to because of these facts that she has obtained first hand from other people she has talked to. Concluding her argument, she urged parents to refrain from allowing their children to watch children's television and instead spend more quality time by reading her newest book to their children.

Unfortunately, this is not the first time children's television has been attacked. Years ago, a Fox station executive was arrested for taking a baseball bat and viciously beating Tinky Winky, a character from the kids show **Teletubbies**. Years later, it seems this controversial issue just will not go away.

Megaton Panda

Fraudulent, free and roaming the cyber streets

Jerome Kerviel was freed from custody on Monday, but is still under formal investigation by the authorities. Stopping short of actually charging Kerviel with fraud, as well as rejecting bids to charge him with more serious crimes such as "gross breach of trust," the French authorities decided to remove Kerviel's passport. It was expired, so he wasn't going anywhere, anyways.

Before being released, Kerviel was instructed not to communicate with any employee of Societe Generale, moreso for his protection from the angry employees.

In his defence, Kerviel revealed during questioning that he was not the only employee at Societe Generale using the same fraudulent manoeuvres. However, he was the only one to drop the company's stock value by roughly 22 percent, based on the last market close on January 9th.

In the end, Kerviel was freed on bail, got an expired piece of paperwork removed, alienated himself from his former coworkers and proving himself either an incredibly destructive con artist, or an incredibly bad market trader.

Impulse Vector

profQUOTES

- Ah... killing things off always makes me feel good.
Metzger, STAT 340
- So someone comes up to you with a gun and says "LOOK AT MY DATA! IS IT NORMALLY DISTRIBUTED?"
Metzger, STAT 340
- Obviously R is a pirate's favourite programming language. ARRR!
Chisholm, STAT 331
- If you don't know what a matrix or a vector is then get out of my class.
Chisholm, STAT 331
- I'm not sure if I'm allowed, it might actually be illegal.
Chisholm, STAT 230
- Is that okay? Are we all asleep? Mystified? On the verge of suicide?
Boudreau, STAT 330
- You're all so quiet... Am I that boring or is it just 8:30 in the morning? 8:30? Thank you. I'll have to send you a cheque in the mail.
Boudreau, STAT 330
- There are three kinds of mathematicians. Those who can count and those who can't.
Wolczuk, MATH 138
- [Class gives mixed consensus on answer] You're all right! ...Not really.
Wolczuk, MATH 138
- Prof: What test should we use? ... All I heard was about five people at once so all I got was "Rhururooro".
Student: That's the one!
Wolczuk, MATH 138
- ...they'll say, "No it's not safe for mathies to write [in the PAC], but the artsies, they'll be fine." No one quote me on that!
Wolczuk, MATH 138
- My office hours... when are my office hours?
Wu, MATH 136
- [After spending over half the class talking about LU factorization, which seemed important] This has nothing to do with this course.
Wu, MATH 136
- It is often like this. Very high on the midterm and very low on the final
Wu, MATH 136
- Pascals are named for Blaise Pascal who is, I don't know, some dead French guy
O'Donovan, PHYS 122
- It's bad enough when I make mistakes, but when the blackboard makes them for me...
Richter, MATH 239
- I went into Computer Science because I can't do arithmetic.
Cormack, CS 240
- This is a model. It's a probability model. That's another way of saying it's a wild-assed guess.
Cormack, CS 240
- So where do we get this? We pick it from the air. Somebody gave it to you in the assignment statement.
Cormack, CS 240
- The only difference between a stupid user and a malicious user is malicious users screw you up faster
Cormack, CS 240
- I mentioned in the first class that 2^{64} is already infinity. So this is infinity⁴
Cormack, CS 240
- This part means "neck" and the *kanji* means "road". Like seeing a head on the road.
Sekita, JAPAN 202R
- STUDENT: I really suck at calculus.
PROF: Then you better start un-sucking at calculus.
Labahn, CS370
- Now I can make it just like a Jerry Springer show. It's all set up.
Chang, AMATH/PMATH 331
- First, let me emphasize that machine learning is NOT stats. I repeat - we are NOT stats.
Ben-David, CS 489
- Teaching imperative programming is like teaching someone to juggle by handing them a knife and telling them to throw it into the air and see if they can catch it.
Ragde, CS 136
- Perfectly natural, nice way to do it. We're gonna do it differently.
Richter, Math 239
- It's out there if you find it, just like porno.
Vasiga, CS 241
- It's a very insecure website.
Vasiga, CS 241
- [holding AC adapter] This little thing you put in a socket. And this little thing you put on your tongue and it feels really good.
Vasiga, CS 241
- The Russians made a ternary machine, meaning false, true and drunk on vodka.
Vasiga, CS 241
- Unless you're lazy, you're not going to be a good computer scientist.
Vasiga, CS 241
- Oh, I haven't really thought about the bonus. I mean, I posted it, but I haven't, you know...thought about it.
Vasiga, CS 241

gridCOMMENTS

s/grid/nogrid/

Hello, *grid*WORD followers. I have been rather busy this week, so I haven't made a new puzzle. (Perhaps perkiED will reprint an old one...?) I'll work on one for next issue.

There were lots of submissions for last issue's puzzle. Four of them were complete and correct. That means I had to go to the work of reading people's responses to the *grid*QUESTION, "how much liquid can you extract from 1kg of granite?". The winner is Melissa & Chris (though they used a funny line-through-epsilon ampersand, which I cannot reproduce here). Their answer was "2L of Granitaid!", which leads me to believe that Granitaid is less dense than water, or M.&C. are somewhere with really low pressure, or they put a lot of energy into the system.

There were also lots of submissions for the Sudoku. (The SudokuQuestion was "How do you 'do' your Spunkaroos??") The editors just handed me the winning entry, by Nick Petric, who responded, "With a piece of floss, a paper clip, and some chewing gum. I MacGuyver them.". You could win with just a pencil or pen — no gum required — by completing and submitting this issue's Sudoku to the BLACK BOX.

Melissa & Chris and Nick, you can pick up your gift certificates to the C&D from the MathSoc office. If the office worker thinks you're crazy, tell them it's in the *math*NEWS mailbox.

Peter

Wants an extra hour in the day

Drywaller

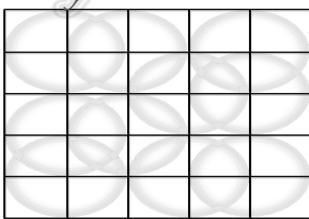
"Listen up. Our client isn't picky, as long as each square has the right number of walls surrounding it. Sounds a little tricky, but we didn't get to be the #3 drywall outfit in town by being lazy."

Also:

- There's a wall around the outside
- They want exactly 12 rooms

3	2	1	1	1	1	2	2	2	3
2	1	0	0	0	0	1	1	1	3
2	1	0	0	0	0	1	2	2	3
3	2	1	1	1	1	2	4	2	1
2	2	3	3	1	1	1	2	2	2
3	2	1	2	1	0	0	1	2	2
3	1	0	1	1	0	0	1	1	1
2	2	1	2	1	0	0	1	1	1
1	1	2	3	1	1	1	2	1	1
2	1	1	3	4	3	2	2	1	2

Umbrellas



Place the following 10 squares on the 10 circles so that the overlapping numbers match up.

1	6	2	2	5	8	4	2
1	9	1	8	2	7	0	6
6	5	1	5	8	5	2	2
5	8	1	6	9	2	6	8
5	9	6	2				
6	4	2	1				

eurica

Sudoku

Submit Sudoku solutions to the black box and answer: "Who let the dawgs out?"

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

You know you're no longer in math when:

Ever wonder if math was the right program for you? Probably not. Why? 'Cause you're in math. Use this handy guide to figure out when you are no longer in math, so you know exactly when to get your arts degree.

- You mix up the names of Laplace and Lagrange.
- You round π to only 2 decimal places.
- You take theorems for granted before proving them.
- You exclude the complex plane by default.
- You think a tautology is the same thing as a theorem.
- You prove by example.
- You must dig to find the roots.
- You think a linear approximation is 'good enough.'

Static IP

Impulse Vector

The Law According to CECS

- There are only 376 skills.
- CS136 is a waste; Scheme is not a skill.
- HTML means Microsoft Word
- JavaScript is only permitted in attributes
- "Tabs" are used for indenting. Web browsers do not need indenting.
- It is still important to ask questions when the answer is irrelevant.
- Frames are the height of web design.

Superbowl Sunday

The Greatriots try to go 19-0; NHL tries to copy

On Sunday, February 3, the yearly ritual of American Football fans will come to a climax. The **New England Patriots**, already 18-0 this season, will face off against the **New York Giants**. What makes this interesting is that this will be a rematch of the final week of the regular season, where the Giants barely came up short in a 38-35 loss to the Patriots.

If the Patriots win on Sunday, they will become the only team in history to go 19-0 in a season, beating Miami's 17-0 record in 1972. For football fans, this will be a must-watch, no question. The Superbowl, a magnet for corporate sponsors and advertisements, is also one of the major money-making events of the year. So much so, that the National Hockey League has decided to consider the following changes to the way their league is run:

- Dynasties are good: The NHL will try to favour one team for the next years in their referee's calls and suspensions in order to create the first NHL team to ever go 82-0 in a regular season.
- Louder controversies: The NHL will pay ESPN to plaster every little potential NHL controversy across their front page for maximum coverage.
- More trouble with the law: Similar to above point, the NHL will mandate players to break the law in order to get into the news. A badder league is a more visible league. Similarly, players are asked to be more arrogant off the ice if possible so that more players like Avery will emerge for the public to have hate-fests about.

The NHL hopes these changes will appeal to the masses and expects the money to start rolling in.

Megaton Panda