Volume 57 Number 5

# S S

Friday, November 8, 1991

COUGH

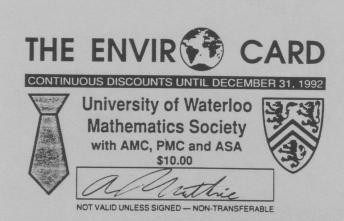
#### Look Ahead

T .18151446	
mathNEWS	
November 18	Issue #6 production night
	6:30pm, MathSoc (MC 3038)
November 22	Issue #6 hits the stands
	133uc #0 mts the stands
MathSoc	
November 9	Car Rally
November 14	Wild Wild West Night at Fed Hall
November 18	Tickets on sale for
	The Stones at the Max
Co-op	
November 12	Acceptance of Employment
	or Second Rounds begin
Cinema Gratis	-
November 19	The Cat Came Back
	Monty Python and the Holy Grail

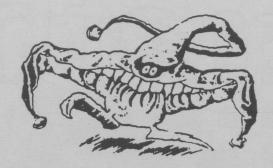
### Prez Sez

EnviroCards are coming! Great deals with local compnaies. The idea behind the card is that one card will replace 60 flyers. If the companies see the cards being used then they will cut down on flyer distribution. EnviroCards will be available this Thursday just in time to save \$3 for Yuk Yuk's Pub. Sold through MathSoc, AMC, PMC and ASA, the card will be good until Dec '92.

Dee Vint







#### Soc Toc

Howdy Folks!

I'm back again to tell y'all about the great events we have planned to entertain you!

First things first ... I have to tell you about what we've already done. A couple of weeks ago, a bunch of mathies congregated at (my favourite watering hole) the BombShelter, to swill beer and play darts. And swill beer and play darts we did! Congrats to our dart tourney winners and losers (how about those double ones?) and thanks to everyone who sang/danced to make me laugh.

Hallowe'en was fun too with numerous people wearing funny/scary/unusual costumes and carving bizarre things out of pumpkins. And, of course, the Rocky Horror Picture Show was cool (as always) and we gave away tons of prizes.

Second things second ... Speaking of prizes (yes, I was speaking of prizes) y'all should come out to Fed Hall on November 14th for our Wild Wild West Night. We are going to have Fabulous Prizes, Wild Western refreshments and FABULOUS Prizes (did I say that already?). Be square dancing or be square!

Also coming... The Stones at the Max!!! That's right, tickets are going on sale Monday, November 11th at 8:30 for a roadtrip to Toronto to see the show that EVERYONE is raving about! Also, watch for details on the end of term pub to end all end of term pubs (say that ten times fast) coming (of course) at the end of term.

Until then ...

Karen Wasslen Social Affairs Director

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Editor: Mike Reade and Betty-Jo Hill

#### CSC Flash

Talk, talk, talk...

Welcome to the Computer Science Club Flash. There is a great deal happening lately, and it is hard for even I, Calum T. Dalek your chairbeing, to keep track of it all. Recently we have had speakers on "Ethics and Computer Science", "C++", " $\mu$ C++", and yesterday, a talk on "Parallel Algorithms". There was also an excellent lecture on using Descartes accounts for first and second year students.

For upcoming events my exec tell me that there will be talks given by Prof. Vanstone, and Prof. Cormak during the week of Nov 11 to 15. Tea and doughnaughts will be served at these talks. Watch posters for times.

The t-shirts and sweat shirts are expected a week or two from now. The prices are still to be announced.

Come by the office MC3037 and talk to our friendly office staff. Buy a membership for only \$2.00. For those interested in attending there, will be an executive meeting on Monday 11 at 3:30.

Thats all for now from the CSC (aka computer staple club).

Calum T. Dalek

#### ActSci Club

The name's Dirk; Dirk Daring and I'm a dick – detective for you less educated folk. I solve problems, big problems, cases no-one else can handle. It's what I do. It's my job, so let's move on.

It was just another cold Thursday, cold enough to con a frosh into licking a flag pole, when she came. Her name's Monica, and she was blessed with the biggest set of ... eyes I've ever seen. She was lost and confused. She needed my help, so I helped her. It's what I do. It's my job, so let's move on.

"I'm a first year Act Sci student, and ... < sniff, sniff > ... I

don't know what to do," she sighed.

"I assume you went to the highly successful yet bordering on unproductive seminar featuring the president of the SOA," I replied.

"Well, no."

"You missed that? How??? I suppose you don't know about the future plans of the ActSci club either?"

"Oh, I'm just a dumb frosh in need of your great wisdom. You

are so mighty. Dirk, Dirk the dick extraordinaire."

Just another one of the many, I thought to myself. I scribbled the upcoming events on a piece of paper and handed it to her.

November 15, 1991 • Act Sci Club party

November 22, 1991 11:30

- Ray Digby foreign investments
- · talking about non-traditional roles

"Oh thank you, DIRK! You've saved my life. Is there anything

... anything I can do to repay you?"

"Hmm... Let's discuss this repay thing over dinner. I wanna show you what a good dick can do." After all, it's what I do. It's my job. So I moved on.

#### MGC

Are you tired of seeing yearbooks that have pictures of the same group of people, page after page? Do you wish that you had a chance to decide what your yearbook looks like? Well, here's your opportunity.

We would like to see a great mix of different people in our yearbook. Pictures can be colour or black and white, recent or from first year — but just submit them soon! Please I.D. all pictures and drop them off in the MGC office as soon as possible, before Monday, November 11.

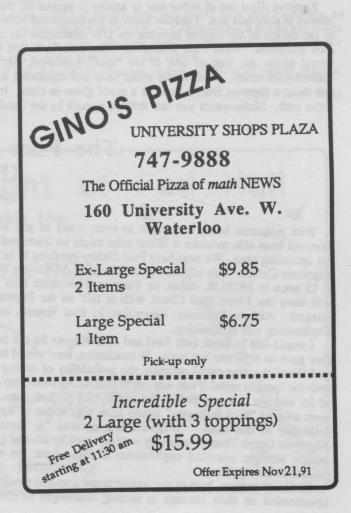
If you haven't picked up your yearbook blurb yet, pick one up and have a friend fill it out for you! "Blurbs" are to be submitted by Friday, November 29, to the MGC office.

I would like to thank everyone for helping out at the bake sale and especially those who spent their time baking all those delicious treats!

Watch for our End-of-Term pub, coming soon!! MGB Notes:

We realize that the Math Grad Ball is still a long time away, but we're already planning for the great event. If you have any suggestions for the theme or anything else in general, we'd like to hear them. More to come about the theme in January when we hold a contest during the first week.

Angie Wong MGC '92 Chairperson



The BIG Dick

# Dr. Jack Edmonds (A Student Issue)

Make yourself heard!

Dear Math students,

I am a Math Undergraduate at the University of Waterloo. I first heard of Professor Edmonds' dismissal by the Faculty of Mathematics from a fellow student who had read about it in the Gazette. Upon checking the paper myself, I was greatly appalled and distressed for two reasons.

First, the thought that UW would be losing such a valuable contributor to education and research was a horrible shock to me. But the thought that we the students are responsible caused me more remorse than the tragic loss itself. The Gazette's treatment of the issue was shameful, and mocks what this country calls "freedom of the press". All that was given in the Gazette article was a very brief summary read as "Edmonds resigned, administration accepted... a black and white issue". But the integrity of education should not be a black and white issue. The ignorance of the University community represents an apathy that is far worse than the UW administration's act in question.

I am ashamed to say that initially I was plagued by the former. The power held by the administration is overwhelming and it is therefore very easy to justify a lack of involvement out of concern for one's own security. We have all been taught that one must stand up for one's beliefs, principles, and most of all truth. As

children we are taught this, as adults we must live it.

Keeping silent out of either fear or apathy is against all that I believe is right and just. I neither know or am concerned with all of the details of the dispute between the UW administration and Jack Edmonds. What I am concerned with, though, is that we would allow the loss of one of the "true" educators left in mathematics today. Math is not about facts and equations, it is not about a theorem from a book or a proof given in class. It is about truth. Mathematics was first defined as such by the Greeks,

and is no less the case after thousands of years of this pursuit. Real math comes from understanding; from one's heart rather than from memorized formulas.

This is what Jack Edmonds believes, and this is what he teaches. I am not alone in my belief that his teaching has been invaluable to this institution. With your help, we can prove this to the administration, and to Jack Edmonds. So I urge MathSoc, who represent the voices of the students, to make themselves heard. This is not an issue of politics, legal matters, or administrative policies. This is an issue of the quality of education that we expect, and demand, at UW. It is our responsibility to let the public know how we feel about Jack Edmonds as an educator, and how he has been treated by the faculty. This can only be done if the students have a means of speaking. I urge MathSoc to set up a petition to give us, the students, a voice in our education and in our future.

I have made available to MathSoc a summary of comments from others on the termination of Edmonds' tenure at the University of Waterloo; it is available in the MathSoc office. This is merely a summary, and dates only up until October 11th, but this does give some idea of the feelings of faculty, students and concerned groups from UW as well as several other universities. Also available are details of the events which comprise Dr. Edmonds' complaint.

This is a student issue. It is MathSoc's duty as the students' representatives to ensure that the students are heard; similarly, it is the duty of you, the students, to make your feelings known. I urge you to ask about it from those in MathSoc and ensure that your sentiments are carried to the administration. Those of you who know Dr. Edmonds will likely appreciate his contributions, and I implore you to come to his assistance.

Several concerned students

# The Pure Math/C&O Club (PMCOC)

Secrets Revealed!!!

With midterms being very close to over, many of you who have not been able to make it to our talks might be interested in the upcoming ones. We next have Prof Dickey speaking to us on Algebraic Curves. This talk will be on Thursday, November 14th at 12 noon in MC5158. Also, on Tuesday, November 19th we will have our friend Paul Check with at talk on the Feynman Integral. And on Thursday, November 21 Prof Heums, from Engineering, will be speaking.

I would like to thank both Ravi and Prof Wagner for the talks they gave us since our last issue. In conclusion, Ravi would have us believe that one could optimize the probability of ending up with the "perfect mate" if one was not to start dating before the age of 36, and not to marry before the age of 100. I think even the most avid of "Ravi followers" would have high hopes of Ravi's fallibility in this case. Wagner's talk entitled "A Taste of Algebraic Graph Theory" was very well received by all, and gave insight into the beautiful applications of ideas from the ever

As for other news, both of our formentioned speakers should be commended on their courage in issuing challenges to certain

popular linear algebra.

PMCOC members. Prof Wagner befell an honourable defeat in Othello last week against our own Colin Springer. Also, it should be noted that defeat lumed over Ravi as well in a three game match of 8-ball with a certain unmentioned individual. Again, I commend these two for their actions of courage, and issue an open challenge to any and all other profs in the field of their choice (preferable not mathematical).

CHALLENGE!!! The ActSci Club has challenged us to a volleyball game to be held in about two weeks time. We honourably accept said challenge, even though I've been advised that the motivating factor for this challenge is that they have seen

our team play.

And finally, plans are underway for our second Undergraduate Math Day. This term, we will host the U of T "MATH007" club for a day of student lectures and discussions. A signup sheet with further details will be available at our office for those interested. Everybody is welcome, and encouraged to consider taking part.

#### Mac Lab

It's finally here! On the weekend, MathSoc christened the Lab, which is located in MC 3042 (the old MGC office) in the Pink Tie Zone. Currently we have two Macintoshes for math students to use. Laser printing services are available for a mere ten cents/copy. To sign out time on the Mac, come into the office and book it. We are looking into the feasibility of night booking - and it's looking good. So far this term, demand has been phenomenal, so we will be getting more computers. If you have an opinion of what YOUR money should be spent on, leave a note in the MathSoc office for Murray, the computer director. New Macs will be available SOON.

> Dee Vint President

#### Our Mac Lab

To fulfill what purpose?

Over the last several years, the idea of a Mac lab has been a popular one amongst many within MathSoc. Indeed, we seem to be on the brink of realizing that very goal.

Some who are aware of the difficulties of getting funds allocated for these machines would know that the off-stream Math-Soc exec would not agree to spend any money on the venture, confining this term's exec to spending no more than \$5000 in any single purchase.

Some might wonder, "Why is the off-term exec blocking a long-term goal of MathSoc?" The question arose during last term about what goal was this. That a Mac lab was to be the outcome, no one had any doubt. But, what purpose was the lab to fulfill? To this question, no answer was available. Without some idea what purpose the machines were to fulfill in a member's life, no reasonable estimation of the software requirements could be made. Without some idea of the software requirements, no reasonable estimation of the hardware requirements could be

Once this startling fact became known, a short survey was conducted in order to determine what students use computers for, whether they used computer resources on campus and whether the computer resources that these students had access to was adequate to their needs. For those students that felt that their computing needs weren't being met on campus, we asked whether they felt that a lab of 3-5 Macs would be sufficient to satisfy their needs.

The response to this survey was dramatic and definite. 75% of the students felt either that their computing needs were being met on campus, or that a small Mac lab would not suffice to fill the gap. Seventy five percent ... In good conscience, last term's exec felt that they could not okay a large expenditure on the approval of 25% of the students.

The question remains: "What purpose is this Mac lab to ful-

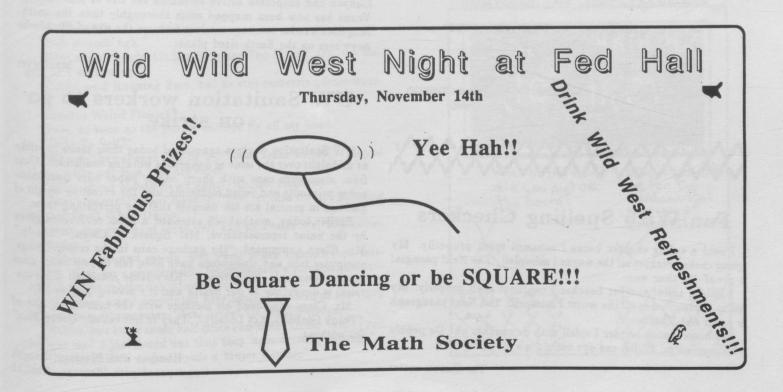
A survey similar to the one ran last term will quickly clear up any questions to whether the students want this lab. This survey can also act as a vehicle to discover our members' needs, giving the foundation we need to make decisions about software and hardware requirements. Further, a complete picture of the final lab will give us a good idea as to this lab's real cost in the long term.

I personally feel that a Mac lab would be a great addition to the services offered by MathSoc. Constructing a lab to our needs instead of to some nebulous ideal can do nothing but enhance

the lab's value, now and in the future.

If you share these concerns, speak to your class representative.

And Then There Were None



# Fed Up!

Here is your bi-weekly Feds update by your bi-weekly Fed, Me. Last issue you got lucky and missed my article telling you that nothing was new. This time something is new. By now you know that we will be having yet another referendum (I'm sure it's just a fad) regarding OFS (Ontario Federation of Students) membership, in February instead of this month. All you co-op Mathies will have a ballot mailed to you during workterm.

Thank you to all who took part in the Fed's recent survey on student needs. We are still tabulating the results so get your completed surveys to the Feds office in the CC if you still have

The Tent is here! Homecoming (ie. The Tent) is here for the weekend, so be sure to take some time to break from studies. If you don't know what it's all about, turn to the person next to you and say, "Excuse me. Can you please tell me about the Tent?" Gotta go now and wax up the skis.

Later, friendly reeghos!

Mike Ab



# WINTER HOLIDAYS PUB

for

1991 Math Frosh and Orientation Leaders

TUESDAY, NOVEMBER 19th, 1991 FED HALL 9p.m. - 1a.m.

Frosh, please wear your pink tie for free admission First 50 frosh win a tie to paint wild



## Fun With Spelling Checkers

I neid a spling checker becus I connunt splell pruperlly. My spling cheker Fickses all the wurds I missplell. The Next paragraf is pruuf dat thae worc.

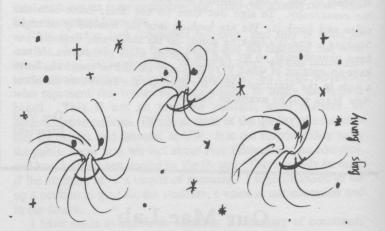
I Enid a splint checker beaches I conjunct spell properly. My splint choker Fiches all the wurst I misspell. The Next paragraph is pruuf dat Thai work.

See howe mutch bedder I splell with de chekker on! De pepole who marced mi ELPE sed eye suould u's et all de tyme.

The Harvmonster

# Space Balls

Warning: the preceding title is very silly. A more appropriate title would be "This week in Space". The opinions expressed in the following article are nonexistent, and contain no humourous content whatsoever.



# This Week in Space

The Galileo spacecraft encountered the asteroid Gaspra on October 29. This was the first spacecraft encounter with an asteroid, coming within 1600 kilometers of the 10 by 18 kilometer minor planet. Galileo recorded 150 images of the asteroid which were stored for transmission sometime in 1992.

The USAF/NASA Combined Release and Radiation Effects Satellite, CRRES, has failed in orbit above earth. It successfully completed its chemical release mission earlier this year but it was hoped it would continue to provide data on the space radiation environment.

Magellan images, now being studied, show Venus has surface features similar to Earth's, such as rifts the size of the Grand Canyon and suspected active volcanoes the size of Mauna Kea. Venus has now been mapped more thoroughly than the earth. Magellan's radar coverage resolves features the size of city blocks anywhere on the Earth-sized planet.

MacGyver

#### UW Sanitation workers to go on strike

UW Sanitation workers announced today their plans to strike at midnight over the issue of dangerous working conditions. Cuts from aluminum cans with sharp edges, paper cuts from computer printouts and failed midterms, and the excessive weight of garbage in general are the dangers that are perturbing them.

Earlier today, mathNEWS attended a press conference given by the union representative, Mr. Squeek E. Cleen. "Lately," Mr. Cleen announced, "the garbage cans in the comfy lounge, computer labs and classrooms have been full of pop cans, glass bottles, printouts, midterms,... Recyclable material. This material is dangerous to our health and it's pissing [sic] us off."

Mr. Cleen concluded his message with the heartening idea of "Think Globally, Act Locally." They're not called "Green Men" for nothing.

Humour with Message, Arrghh Constipated with Pleasure, Ahhhhh

# The Continuing Adventures of Major Booboo of CSIS

This Episode: BooBoo rips off part of Dances With Wolves, then gets killed (I mean it this time).

Booboo made the foolish mistake of crossing Columbia Street during rush-hour without looking. Despite this, he was able to cross the road unharmed. Happy at this unexpected bit of luck, he stepped onto Ring Road and was hit by an onrushing Mack truck. The impact threw him fifty meters. He landed on his head, so, fortunately, nothing important was damaged.

When he regained consciousness, he found himself tied up outside a large tent. Inside, he could hear muttering. He recognized the chantings as those of the infamous Kannayusmakmee tribe, a group of misfits who, despite not having enough Indian blood between them to make a decent transfusion, still managed to gain Indian status as a way of not paying sales tax. (Actual fact: According to Canadian law, you are a status Indian if people who know you say that you are.)

The muttering continued:

"Me, Kicked Bird, ask what should we do with spy?" asked

Kicked Bird, "What you say, Blowing Wind?"

(Note: The spaghetti-western Indian accents were not just a put-on by the tribe. They actually spoke that way, most of them being former engineering students.)

"Me say one of us go talk to him."

"Good idea. Me send Fake Arrow Through Head."

"No. Me can't go. Me have headache. Send Grunting Eagle."

"Ugh screech ugh ugh sqwauck screeeeech ugh," said Grunting

"Grunting Eagle say he too busy, he must wash his squaw today," said Speak With Many Tongues In Mouth, during a break for air.

"We should send Hides Well In The Grass, he has done little for the tribe lately," said Kicked Bird, "Anybody see him around lately?"

"No."

"Neither I."

"Ugh screech ugh."

"How about Reads Alt.Sex.Bondage Too Much? Oh, me forget, he's all tied up."

"Could send Running Bare, but he still recovering from frostbite."

"Smokes Weird Plants?"

"Sure, as soon as the purple caribou fly off my head."

"Talks To Self?"

"Why do they always pick on us?" said Talks To Self. "Maybe they no like our face," he answered.

"What about Mouth Sewn Shut? No, no, forget it."

"That's enough!" said Booboo, "just let him do it," pointing to Feet Swell When Damp.

"Okay, but you must come over and sit beside me. It is snow-

ing today."

Booboo went and sat on Feet Swell When Damp's feet, mistaking them for a chesterfield. Ignoring Feet's screams, he proceeded to overwhelm his interrogators with his life story, including his secret origin (reprinted here against the will of the CSIS Information Obscurement Act) Secret Origin © Follows:

"Honey, you know those half-price non-name Ortho 7/7/7s you bought me? I just found out that they were actually aspirin."

"Uh oh, I think we just made a Major Booboo"

Everything went normally in Booboo's life until the day he visited Dr. Playgodd's laboratory and took part in some unau-(information thorized experiments wi . obscurement) \_\_ept he was unable to digest any bean products. \_(information obscurement) However, his powers did \_ and then he joined CSIS, where he took part in the daring raid against \_\_\_(information obscurement)\_\_\_regained his dignity at great cost but could never remember where he got the "Moth" tattoo. Then he was assigned to his current mission.

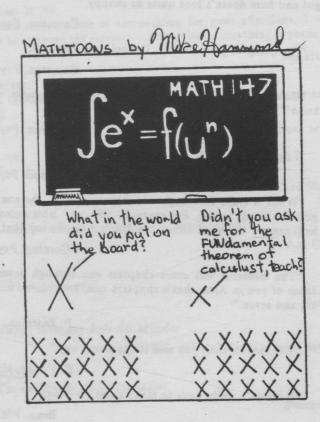
By this time, his captors had slipped deeply into siesta (a tradition adapted from their cousins to the south) and Booboo was permitted to put his escape plan to work. He quickly filled Laurel Creek with village food (which he realized would work better than quick-dry cement) and re-routed the water to flood the Village Green, where all of the Kannayusmakmee were encamped. Their snores mixed with gurgles, the tribe went floating off towards Laurier (no joke here, Laurier is one of the finest high schools in this nation) and were never seen again. It seemed that Major Booboo had saved the day; but had he?

"Not if I can help it," laughed the fiendish face looking into the viewer screen. "Wait until my next plot hatches, hah hah

hah!"

Who belongs to this fiendish face? You and Booboo (and us) won't know until next week, so tune in, same Booboo-column, same Booboo-mathNEWS.

> Dances With Mind Dances With Fuzzy



## **Profquotes**

Where you get to show them just how good your notes

It usedta be ("I can remember when I was a frosh we didn't have none of ... ") that there was an intro type blurb at the beginning of the profquotes. None of these here young folks seems ta have the time ta do that kinda thing anymore, but it lent it that, you know, that personable type touch whatchamacallit. The reader types knew there was real people back here what read all them prof quotes and hand seelected only the best and choicest quotes for public consumption. Anyway, these here young fellas gave me the job tonight, so I thought I'd make sure it was done right!

"Can I have your attention? ... No? ... Okay, can I buy your attention then?"

V. Zeidan, Math 237

"That's the first commandment. Thou shalt not divide through by zero."

W. Welch, Stat 230

"This is the way I expect you to do it. I don't expect you to like it."

Springer, ActSci 231

"By the time we hit 1930, we have 'Apocalypse Now' economically."

L. Smith, Econ 101

"Penis Envy: the girl looks at what he's got and what she's got and hers doesn't look quite as snappy."

Cameron, Psych 101

"I'm going to get a penis... I'm going to buy one."

Cameron, Psych 101

"Come on! When you're three, how many chicks do you know?"

Cameron, Psych 101

"I figured I was a loser."

Cameron, Psych 101

"When a child first begins to form sentences, he sometimes gets the words wrong. For example, 'Me eat.' Now occasionally he'll reverse the word order... I didn't mean to say that."

Corning, Psych 312

"The midterm will cover chapters one through seven. For those of you in Arts, that's chapters one, two, three, four, five, six and seven."

P. Eastman, Sci 205

"You ram it, then you ram it the other way."

E. Vrscay, Math 137

"It doesn't really have to make sense. It's logic."

Bean, PMath 330

"If you're talking to someone and they die, eventually you get bored and quit talking."

P. Buhr, CS 242

"They were putting newborn babies in the drawers- No, they weren't closing the drawers!"

L. Smith, Econ 101

"Dresses. You know, ladies, the thing with the big hole in the bottom."

L. Smith, Econ 101

"This turns out to be the correct answer, so I think all the errors have cancelled out."

Richmond, Math 235

"My biggest problem is I think faster than I write, so I'm the quickest mind in North America."

Ravi, Stat 231

"If you saw someone of the opposite sex, you would get off. At least I would."

Ravi, Stat 23

"Now I have a 2 dimensional set of girls and a 2 dimensional set of boys."

B. Forte, Math 247

"Go and bug your TA — they are overpaid and underworked, just like me."

A. Wong, Stat 230

"What is the significance of 3? Well, any larger number would confuse you, if you see what I mean."

Jackson, Math 235

"I don't remember secs too good."

F. Zorzitto, Math 147

"See how cleverly I turned that around and made it your problem instead of mine - one of the advantages of being a teacher."

Coffin, CS 242

"It's obvious! Slap her."

Ravi, Stat 230

"Here's 3 weeks worth of ActSci."

F. Zorzitto, Math 147

"Being an intellectual and only having recently joined this planet, I forgot to leave a place for your names on the midterm."

D. Jackson, C&O 230

"Sorry, this lecture's full of this stuff. I've tried to keep all this theory and nonsense away from you as long as I could."

Hewitt, Math 216

"It's going to be a short review because there's not much to remember. In fact, I don't remember anything."

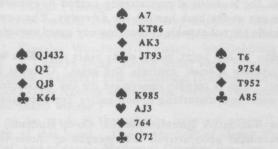
Ravi, Stat 231

# The Bridge of Frankenstein

On a dark autumn night, a cold wind blew from the North. Winter would be here soon. Ace Upmysleeve was on a drive to Outer Precepetamia, in order to meet with Dr. Spooner, a notorious scientist delving into the mystery of the Queen of Hearts, and all her mischievousness. Rumour had it that she had guillotined many a man, and now was up to some tricks with disappearing and reappearing spontaneously.

When Ace got to his chalet, a thunderstorm was starting and he was glad to get in from the rain. Naturally, after talking with the Doctor for an hour about physics, interpolation, and bridge, a game was started up with Ace, Dr. Spooner, Igor, and Penelope, the maid. This was the hand that brought much ex-

citement:



Igor led the 5 of hearts, and Ace played small, and the Doctor won the trick with the 8 in hand. Next he played a club, and upon winning, Igor switched to a diamond, to the Jack and King. Another club, and another diamond followed, and then Dr. Spooner decided to go for the gusto, and he led a small heart from hand. After all, he knew where the Queen was; Ace would have played it at trick one if he had had it. And so it went, small, Jack and right before Ace was going to discard, the Queen fell out of space and won the trick. Then a diamond back sealed the Doctor's defeat.

After the game, Ace was still shaking. "It was so strange. It was like it just popped out of nowhere."

Dr. Spooner just shook his head and said, "I knew she was going to pull that cunning stunt again."

Ace Upmysleeve

# The Rights of CS

- 1. You have the right to remain silent. Anything you say can, and will be used as course material.
- 2. You have the right to a CS prof. If you give up this right, A Duck will be appointed for you.
- 3. You have the right to a CS tutor. If you give up this right, a foreign graduate student will be assigned to teach you in an obscure language.
- 4. You have the right to a lab mark. If you disagree with this mark, you will be laughed at, insulted and ignored.

Warning: Creativity and Originality are punishable offences and will result in a severe loss of marks (even if it is a better solution).

Ultra Classified

ATTENTION DRUMMERS: A hard working student progressive rock band named Aftermath is looking for you. If you want to play Rush, Marillion, Kim Mitchell, U2, and R.E.M., we want you.

Contact: Collin Roberts at

743-1083 (Kitchener, weekends)

(416) 455-7419 (Brampton, weekdays)

or: Jason Leonard at 1-927-3249 (Caledon)

Poster of Pittsburgh searching for a new home. Contact ceduke at MathSoc.

Dan,

I think Cathy is having a secret affair with Dan - is it the big O? Maybe Blondie should tap the lines.

Dan

to PN.

Watch out for stray Time Warps!

BtSn

Butter co-op,

Have you heard from Bernoulli? My midterms spat at me!

Rapunzel

The Gazette,

What me cynical? Not me, just 'cause their stinking, rat-eat-rat world is spiraling down into environmental, economic, and social oblivion, that doesn't make me cynical. :-)

MacGyver

Dearest MJW,

Hmm...now there is competition for your affections, I will have to improve my services...remember...anything is yours...

Sex kitten

Wanted:

A reliable, efficient dishwasher (about 5'4", cooking an asset

Frosh scout

Darren

You are a fat french seal.

The Card Shark

Ken Small

Learn your long division before convocation.

AM Guys

Rike

No more dessert!!!

Smoke

Happy birthday Rob del Mundo.

MathNEWS, AniMaL & all of your mates!

MacShim.

I'm confused! My brain hurts!

Boomaster

The Bitsnatcher

#### Midterm Horror Picture Show

The scene opens at the examination room of Professor Frank-Lee-Mydear at the beginning of the calcubra one-thirtysomething midterm. Prof. Mydear is dressed in his best corset and nylons, for this is a special occasion for his math class—they get tested on the combination of Transylvanian math and Paris lingerie fashion that make his class so distinctive. Of course, no programmable calculators or Frederick's of Hollywood catalogues are allowed.

"In about five minutes, the T.A. with the black lipstick and ravishing musculature will distribute the midterms face down." said Prof. Mydear. "On the front page, please write your name, ID number, and your sexual orientation for my records. Also on the front page, there is a breakdown of marks. You will notice that there are 50 bonus marks available. This is for a private oral exam. See me after the exam to make an appointment."

Riff-Ralf bursts in from the side door, carrying a load of blank midterms.

"Riff-Ralf, you fool! Where were you ten minutes ago, when I asked for the exams?" thundered Mydear. "Oh, never mind. Go home and prepare the post-exam party."

Riff-Ralf slinks back out the door he came, leaving the midterms in a pile on the back desk. The T.A. comes back and picks them up, then prepares to distribute them.

"Not yet, sweetie. I haven't finished all my instructions yet. Just two more minutes, that's all." said Mydear. "As I was saying, this exam is out of 100, with 50 possible bonus points. Of those 100, there are 20 true-or-false that even an engineer with no fashion sense (which is most of them) could answer correctly. There are 30 multiple-choice questions worth two marks each that are a little harder—the engineers would fail this section, but anyone with the brains of a slug will pass. Then there are 4 short-answer questions worth a total of 10 marks, and 1 essay question worth 10, which is virtually impossible—but then again, so is finding high heels in my size. After your exam, there will be a party at my place—the address is on the back of the exam. You can come as you are," he said, indicating the rows of men and women in their sexiest lingerie, "or be a little more informal. Okay, Rockie, you can pass out the exams now."

Rockie begins to hand out the midterms to the students in the back rows. Suddenly, there is a loud crash at the side door. The door falls into the classroom and Riff-Ralf walks in, dressed in the official uniform of the Transylvanian Armed Forces.

"Hold it right there, Mydear." said Riff-Ralf. "The government has discovered your little plan to subvert and pervert the students in the math faculty of the university here. In fact, they've known for quite some time now—I would have come earlier, but they sent me this assignment via Transylvania Post."

He assumes a dignified tone, totally unbecoming his undercover disquise.

"By the power vested in me by the Sovereign Planet of Transylvania, I hereby accuse, try, and convict you of corrupting these students with your eccentric teaching methods and weird taste in clothing. The sentence is death."

With that, he pulls out a funny-looking raygun and attempts to shoot Mydear with it. Nothing happens. After a short while, Riff-Ralf mutters some comment about stupid engineers' pet projects and pulls out a .44 Magnum from his coat. He then shoots Mydear dead, not realizing that one of Mydear's rebel students is missing, perhaps dead.

The moral? If the V1 cafeteria serves Meatloaf one night, use a lot of ketchup and try not to think about Jeffrey Dahlmer.

Will The Mystery Frosh Please Sign In?

# In the Toronto Jungle

Many first year Math students are soon to experience the thrills of house hunting in Metropolitan Toronto. The concrete jungle is populated by only four species.

Humans Although there are in excess of three million of them, each human inhabitant of greater Metropolitan Toronto largely tends to ignore all other humans. Although this can be wonderful if you're in a grumpy mood on your way to work at 7:30am, it makes it bloody hard to get a date for after work.

Automobiles The automobile is a commonly sighted species in Toronto. Recognizable by its distinctive smell, the automobile tends to travel in packs. These packs are so large that the leader is always already parked downtown before the one at the back has left the driveway. The ones in the middle are not capable of breaking any speed records either.

Concrete At one point, many, many years ago, there were two competing species: concrete and grass. Grass is now extinct. This is terribly convenient for the automobiles, but is sometimes disturbing to non-native Torontonians.

Houses Non-native Torontonians (i.e. Co-op students) need to house-hunt upon arrival. The weapon of choice is the rifle. (The AK-47 being a distant second.) Although houses are not in short supply, only one variant of the species can be legally hunted. Unfortunately, this nomadic variant is endangered and can only be identified by a "vacant" look. Competition between new Torontonians is fierce. It is important to get your shot off fast and mark your freshly killed territory before others claim it.

Remember, a month's supply of bullets in Toronto can cost anywhere from \$300 to \$3000, so shoot carefully kids!

Humour with message, ARRRGH

# Vapidfire

The Middle East peace conference in Madrid has been deemed a mixed success. While the Israelis and Palestinians have agreed that Miller Lite both "tastes great" and is "less filling," they are still at a severe stumbling block. "They insist on opening their eggs at the bottom," Yitzak Shamir was heard to state, "and they still think that the irresistible force will bounce off the immovable object." Next month's agenda: Campbell's Chunky soup: fork or spoon?

The mathNEWS suggestion for Brian Mulroney: skip the UN General Secretary position. We would rather see you heading the UN Peacekeeping force in Iraq.

Gwen Jacobs was the ideal university student to walk through Guelph topless. Let's be thankful that none of the following did the same: George Wendt; Barbara Bush; Tommy Lasorda; Roseanne; Dave Thompson of Imp'tint (he has too many things to get off his chest first); tenured profs; and Mother Teresa.

VapidFuzz Beaches with Mad Dr. Steel

#### mastHEAD

Why do I always get to type the mastHEAD on weeks that I don't want to? Well, I guess it doesn't matter much. I don't

think anyone really reads this anyway . . .

On to the part that everyone is waiting for (Well, those that are reading this), the list of people who came out to snarf pizza with their favourite way to keep warm: Michael Melvin (SEX! (What other way is there?), Monica Rooney (Mongolian Lamb Fur), David Weil (solar surfing), Karen Wasslen (G.S.), Mike Hammond ('Dress' Poker), Adam Benjamin (Mispell a word on a news posting), Philip Rittenhouse (Periodic exposure to liquid nitrogen for perspective), Dale Wick (CSC couch), Carlene Knowlton (My hands in pockets [Whose pockets? - Ed]), Christina Caldarelli (Juggling), Brian Spencer (Run to meet the Kitchener Chance-it), Curtis Desjardins (My Texas Death Chili), Brent Williams (Tounges and black leather), Caryn Babstock (Hot bubble baths), Dee Vint (Fuzzy Slippers), Erich Jacoby (Shaved Mohawks - NOT!!!), Chris Reuter (Random acts of Arson), Kingsley Woodward (Twister), Ian Goldberg (I burn things...), Carolyn Duke (Ride a wooly horse bareback), Mark Brockington (Napalm), Eric Sutherland (Nuclear bombs), Shannon Mann (Like Nanook of the North, between two bearskin rugs and two naked women.)

Ok, so we made it through the issue yet again (I am just guessing at this point...) with the help of Gino's Pizza, 97.7

Hits FM, and of course Marion at Graphics Services.

Mike Reade (Not getting out of bed)
Betty-Jo Hill (Outer-space Heater)

# A Public Service for Engineers

To help our friends in engineering, we have graciously created this card to be cut out, copied and distributed by the engineerily handicapped. We hope that it will help to ease the challenges of everyday life for these poor, deprived, underprivileged wretches. So when a total geek walks up and hands you one of these cards, give from the bottom of your shoe.

Help me, I see someone I might like to know but I don't have enough confidence or skill to converse with them.

Fidgeting Hopping Stammering Drooling Grunting Shaking

The interpretation of engineer body language:

I am a socially handicaped engineer, unable to sustain a normal social life. Please give generously. Any donations will be gratefully accepted (money, beer, conversation, fasion advice, companionship, hygiene hints, test solutions, etc.)



# Left Turns Demand Equal Rights

As a society, in the past, our language has been biased towards right hand turns. We feel that, as a progressive society, members at a U(W) should adopt a dexterous-neutral mode of speech.

I'm sure that you have observed a conversation like the

following one:

"Can you give me directions there?"

"Sure, drive two blocks, then make a left, right?"

I feel that we should remove such biased directional terms as

"Right On!"

"right-of-way:, let's go to the right"

"right tool for the right job"

for more neutral terms, such as

"the centre-of-way"

"middle tool for the middle job"

"Neuclus On!"

The only way that our society can truly evolve to its full potential, is by watching our language, and removing such dextrous terminology.

**Bugs Bunny** 

Some people think that Hell is hot. But it's just a small room with a pencil and a CEO 230 text.

## Deep Thoughts

My nephew asked me why Christmas advertisements had started so early this year; even before Hallowe'en. I told him Santa had been given 3 weeks to live by his doctors. This final Christmas would have to be held early.

He cried a lot but I couldn't bear to tell him the truth.

MacGyver

# Architecture Details on GreyhoundNet

In our last column, we took a detailed look at the data structures which GreyhoundNet uses to get such good performance ratings. Now we shall investigate the net itself.

Each local network of platforms is known as a "station". As these were not built with compatibility in mind, but purely for local convenience, we find a great deal of architectural variation in the stations, as well as the platform numbering systems within each station.

Most stations employ a serial input/output method - any platform may be used for either uploading or downloading passengers and baggage. A notable exception is the newly-designed Toronto main terminal, which is built on a parallel model: Platforms 1A through 1F are used exclusively for download, while platforms 2A through 12B are for uploading only. (It is rather interesting to note that, although a hexadecimal number system is used, only a very few of the integers between 0 and 12B are actually used. The remainder are presumably reserved for expansion purposes.) In Kitchener, the GreyhoundNet platforms are combined with some local platforms used by Kitchener Transit: platforms 1-9 are used for Kitchener Transit buses, while platforms A-F are used by GreyhoundNet, and then 10-12 are once again Kitchener Transit platforms. Although this discontinuity may be confusing at first, most passengers quickly get used to the addressing system. On the other hand, the terminal in Saskatoon has taken the addressing system to its logical conclusion: the platforms there are numbered 0-9; this zero offset for the initial platform makes it easier for passengers to find the right bus quickly.

The buses themselves all have a reasonably standard construction which works well with the interfaces provided by most stations. Each bus has built-in slots for 40 to 50 passengers and has a small cache ("standing room") which will accommodate approximately 10 more. Passenger slots, known for convenience as seats, line each side of the bus in pairs. In the address space below the passenger space are three compartments of baggage storage space. This is not typically filled up even by a full complement of passengers, so there is extra room for unaccompanied baggage-structures which are referred to as "parcels". For more rapid access, there is a buffer above the passenger's address space where a small baggage structure may be stored if it is needed during the transmission for any reason. (From this arises the interesting result that passenger-structures may in fact alter themselves even during their own transmission!) Also in the bus is typically a small "washroom space" which may be used for garbage-dumping schemes.

Mr. Death

#### VIANet



The Definitive Intercity Transportation Guide For The Compleat Geek

In the 11 October edition of mathNEWS, the eloquent Mr. Death has written an article describing the admittedly effective GreyhoundNet, detailing the benefits it offers over standard long-distance propagation systems. However, it is my purpose in this article to inform you, the client, about the added benefits and increased efficiency available with the uniquely equipped and highly centralized VIANet.

This system, although serving a similar purpose to GreyhoundNet in its propagation of the "passengers" and "baggage" data structures, is organized quite differently. The ribbon wires it uses are in fact made of steel, supported by a partial casing of wood and gravel. While this requires specialized hardware on the part of the vendor, the resulting clarity of transmission cannot be surpassed by any cost-effective means. (It is true that JetNet, the newest network in the field, has unsurpassed transmission speed and clarity. However, despite heavy government subsidization, this network is simply not viable for the home market except for transmissions of a very great distance.)

The asphalt ribbon wire used by GreyhoundNet has been shown to produce a distinctly less clear signal than the steel medium used by VIANet. The asphalt GreyhoundNet uses is part of a public access transmission system, and is shared by a large number of small, independent data packets. These can cause considerable interference on the system as the density of data reaches its practical upper limit, especially if-as often occurs-control over one of the packets is lost, causing a system crash of greater or lesser degree. Due to these dangers, a strict transmission protocol is used, which limits transmission speed even at low system loads.

On the other hand, the proprietary system used by VIANet is almost entirely free of line noise, and speed is only limited only by the actual hardware used. Thus, transmission speed is usually significantly greater than that of other media.

VIANet is also the best-established network of its kind, having operated under different names as long as the technology has existed, and it has consistently upgraded its system. Recently, however, one of many bugs in the "Prime Minister" software forced a drastic reduction in depth of propagation of this system, leaving large amounts of unused code in cities, towns, and villages across the nation. Despite this setback, VIANet continues to offer a very high-quality service with still quite large propagation range at a very reasonable price.

In fact, those are the three main advantages of this system over any other transmission: speed, per-packet price, and high values of a parameter called "service." This last is a component of all kinds of transmission, but is often ignored in favour of higher speed and lower costs. What it does is decrease perceived transmission time, the time used internally by most wetware systems. Hence, effectiveness of the client system is heightened considerably at minimal actual cost.

As explained previously, VIANet's protocol allows significantly greater speeds than those offered by its rivals, which, despite their advertising, are far lower than that of sound, let alone light. And due to the stability and centralization of VIANet, it is able to offer extremely reasonable prices-also based directly on propagation distance—especially to the student user, and most especially if advance request is made for system resources.

All this is not to say that GreyhoundNet is entirely inferior to VIANet. Indeed, for flexibility there is no better product offered by any vendor. However, it should be clear that for most ordinary applications, VIANet is the system of choice.

Who, me?

# Top Ten Things Co-op Frosh Learn in their First Year of Interviews at Needles Hall

- 10. The number of junior-level jobs is inversely proportional to the number of juniors.
- 9. The interviewers you didn't like are likely to rank you higher than the ones you did.
- 8. How to convince yourself that second rounds aren't that
- 7. There really is a recession.
- 6. Most jobs that are open to "any level" aren't.
- 5. What true paranoia feels like when you apply for thirty jobs, get three interviews, and get 2 "not ranked"s on your ranking form.
- 4. How truly depressing the words "not ranked" are.
- 3. How to walk up/down stairs diagonally.
- 2. There are no such things as "Co-op student benefits," "excellent first-year jobs," or "pleasant early-morning inter-
- 1. Exactly why the building is called "Needless Hell."

Hammer Time

# Bruised Vegetables are our Friends

In my lifetime, I have seen many interesting and truly fascinating trends. But recently, in my ongoing study for the better treatment of vegetables, fruits, and toxic waste, I have witnessed something that takes the proverbial cake.

I was sitting in the Engineering Lecture Hall, waiting for 5:00 so I could give my talk as part of the Gathering of Really Apathetic Persons Examining Vegetables In Natural Environments, when I saw a person talking with a kumquat, and after a particularly emotional scene, he gave it a BIG hug.

Now, I don't wish to comment on the idealness of this action, but I think the reaction of the now much-maligned kumquat is enough to make the heart grow warm. Instead of yelling at this poor person, who had obviously gone through an emotional trauma of epic proportions, it just sighed, and fell to the ground exposing itself to the world, as if to say ...

"I am a free spirit, and I will not allow petty restraints to

cloud my world." If only the milkman down the street could be as considerate.

I'm Andy Rooney

## Psychology Department

New research has been released on the optimism test. This study shows a new range of responses to the classic question -"Is the glass half full or half empty?" More research will be necessary to determine the meaning of these results, but for now we give you the responses as we received them.

Student Response

Pure / Applied Math 0.5 \* volume of the container

Computer Science "setmode volume; for count is in range of glass\_size; counter++; loop"

CS/EEE "What, like I have time for silly questions!"

Artsie "Wait, show me the container again ... "

WLU (non business) "What do I look like, a business major?"

Engineer "Well, seeing as the quantity of water is directly proportional to the quantity of empty glass, and we can measure the density of water ... What was the question?"

Chemistry 50% H<sub>2</sub>O, 50% Air

Philosophy "The glass is actually full, it just projects an image of being only half there."

Psychology "Why do you ask?"

Kinesiology "Can I have the other half? Oh it's only water?!"

Rec. Student "Half gone"

WLU (business) "Do I get a credit if I get the right answer?"

Biology "Is this a math question? I don't have to do math anymore. I already passed that course!"

Architecture "Oh no. Not another essay question!"

English "Because. Oh sorry, wrong question."

The Bitsnatcher

## The Stanley Burger Philosophy



At Stanley's we believe that each customer deserves a great tasting, wholesome meal. Every item on our menu is prepared the olde-fashioned way using only fresh, nutritious ingredients. Our burgers are made with 100% pure beef, all natural spices, no added preservatives and are served on bakery fresh buns. We take pride in putting only the best into everything we make.

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(Across from WLU) (Limit one coupon per purcha

#### 1/2 PRICE

ON ANY ONE OF:

-STANLEY BURGER

-DOUBLE BURGER

-SUPER STAN



Expires Nov. 21/91



# mathNEWSquiz # 4

(Subtitles? We don't need no stinkin' subtitles!)

Greetings squizzers! Welcome to another installment of the squiz. OK OK I know you're excited, but you have to learn to calm down a bit. Let's recap the answers to the last squiz before I start to fall asleep: 1- Ghostbusters II; 2- Mermaids; 3- LA Story; 4- They Live...; 5- Underdog; 6- Big City; 7- Electra-Woman (her partner was Dyna-Girl); 8- Scooby Doo and Company booted around in the Mystery Machine); 9- 51201; 10-Snoqualmie Falls, WA; 11- Ed shot it out on their honeymoon; 12- Margareth; 13- Urgent (Foreigner); 14- Gypsy (Fleetwood Mac); 15- No More Lonely Nights (Paul McCartney and Wings); 16- Puberty Love (one killer tomato wore ear muffs, so they killed him by showing him the sheet music).

The people who submitted answers to the last squiz are as follows: the nameless grad student (1), Fisbin (4), and our runaway winner with a score of (8) is ... Ta DA!!! ... C.Marius and the Evening Jugglers. You knucklehead jugglers can claim your prize in the MathSoc office. Now on to this week's squiz:

#### Movie Quotes (Name the Movie)

- 1. "I need a vacation!"
- 2. "It's a bit nippley out."
- 3. "Did you ever notice that like in the movies that they, when they're drivin, like that they don't look at the road like for a long time?"
- 4. "The older you get, the younger your dates are. It won't be long before you're dating sperm."

#### TV Theme Songs (Finish the Lyrics)

- 1. "I never spent much time in school ..."
- 2. "Whenever he gets into a fix ..."
- 3. "You can do what you want to do ..."
- 4. "And the card attached will say ..."

# Robots & Electronic Entities (Name the Movie/Novel)

- 1. Gort
- 2. WOPR
- 3. Muffit
- 4. Mycroft Holmes IV

# Lyrics (Name the Song and Artist)

- If you don't like it you can't send it back
- 2. Offer me solutions
  Offer me alternatives
- 3. Temptation, frustration
  To hurt they try and try
- 4. Now he's got nuthin'
  Head in the oven

Well, that's that for this week. This is your second last chance to enter this term, and to win a wonderfully amazing math-NEWSsquiz prize! Entries are accepted in the BLACK BOXon the 3<sup>rd</sup> floor of the MC. Make sure they're in by Monday Nov 18. Good luck and keep on truckin'.

Fluffy the Wonder Bunny

# GridComments Really Incense Dean!!

Content, Only Mere Mementos, Eludes Normal Thinking Systems!

Well, it would seem that this Grid was a tad more challenging. The GridMaster, a spiteful, wrathful deity, declares, "Well, they said the previous one was too easy! I made this one a bit more interesting." And so it appears to have been. There were a total of 4 solutions submitted in all. Correct cryptic Grids came from Fisbin and Raptor of the Deep, and the lone conventional submission was also from Raptor of the Deep (it was correct). An incorrect cryptic was submitted by Nameless Grad Student, but it was a valiant effort.

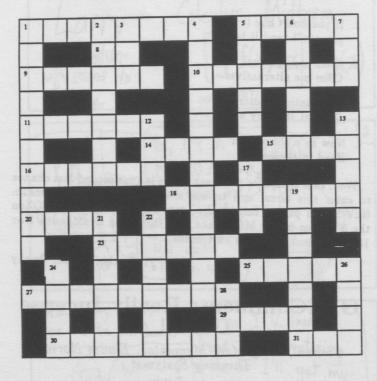
Our intrepid trio's favourite Jason movies are: "Teen Wolf II (with Jason Bateman)," "Jason Two-two and the Hooded Fang," and "101 Dalmations Nailed to the Wall."

Comments: These cards are too sticky. What did you do to them, Darren?; Sic semper tyrannis!!; It is better to give than to receive, especially w.r.t. exams!

Administrivia time, folks. We've got a couple of grids here, but none has both cryptic and conventional clues, which means a late night of trying to fill in one of these grids. If anyone wants to submit a grid with both sets of clues, it will certainly take a load off next production night. There are two more issues this semester and we can always save some up 'til the start of next term. Just drop it in with your solutions. It can be kinda fun looking at it from the other side for a change. (Shades of "Send your pledges now, operators are standing by.")

Our fortnight's fortuitous foremost (the winners) are Fisbin for the cryptic and Raptor of the Deep for conventional. Each may drop by the MathSoc office (MC 3038) to pick up his/her/nes/its ValuablePrize<sup>tm</sup>. Solutions to this grid are due Monday, November 18<sup>th</sup> at 6:30pm in the BLACK BOX (across from the comfy lounge) or under the mathNEWSoffice door (MC 3041).





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## Conventional

#### Across

Across

Cryptic

1. Away from unseemly? (8)

5,7d. Boxes and sees can arrangement. (7)

8. A number like Magnum. (2)

9. Hang an adult diaper. (6)

10. Traps threads. (7)

11. Have new designs on shortened Dracula? (6)

14. Has a snow-blower. (4)

15. Poke the drop out. (4)

A stop and starter, perhaps. (6)
 Backwards Tom! Needs two circles for driving. (8)

20. Short album and Chip make a long story.(4)

23. Woman's boyfriend is a comic character? (6)
25. Bury tin amalgam with hesitation. (5)

27. Peers' love makes one get up late. (9)

29. An in-and-out girl. (4)

30. It's said rest confurses a catasthophe. (8)

31. Much land area. (3)

Down

1. One who begins and oversees a burial. (10)

2. Function, in opera terms. (7)

3. Direction in victory. (3)

4. Gloomy because record plays long into the night? (12)

5. To be wrong or mistake. (5)

6. Unable to hesitate when near gallop. (6)

7. see 5ac.

12. Grass for cooking. (3)

13. Time since year one makes for a pithy saying. (5)

17. A logical operation in no time. (3)

19. First, acknowledge a correction. (7)

21. Putting hydrogen in ringlets makes for ill-mannered peasants. (6)

22. Tests bores. (6)

24. Keen six in modern age. (4)

26. The origin sounds like the way. (4)

28. Average, but mixed up music style. (3)

1. Photographs (8)
5. Musical instrument (7)
8. Either. (2)
9. What a student does. (6)
10. Army official. (7)
11. Attractor of others. (6)
14. Kind of. (4)
15. Male deer. (4)
16. Parchment. (6)
18. Al Pacino. (8)
20. Messy person. (4)
23. Nuts. (4)
25. What is in a forest. (5)
27. The one with the money. (9)
29. Colour of water. (4)
30. Attempt a cream. (3,5)
31. Thigh. (3)

#### Down

A re-used piece of parchment. (10)
 The city down the 401. (7)

3. Water container. (3)

4. Importance. (12)

5. Trousers. (5)

6. Take into custody. (6)

7. Black gold. (3)

12. Until. (3)

13. Consent. (5)

17. Time period. (3)

19. Weapons available. (7) 21. A counting system. (6)

22. Make you feel at ease. (6)

24. Review. (4)

26. Break. (4)

28. Moved quickly. (3)

Name: Fav. Nuclear Reactor: Comment: