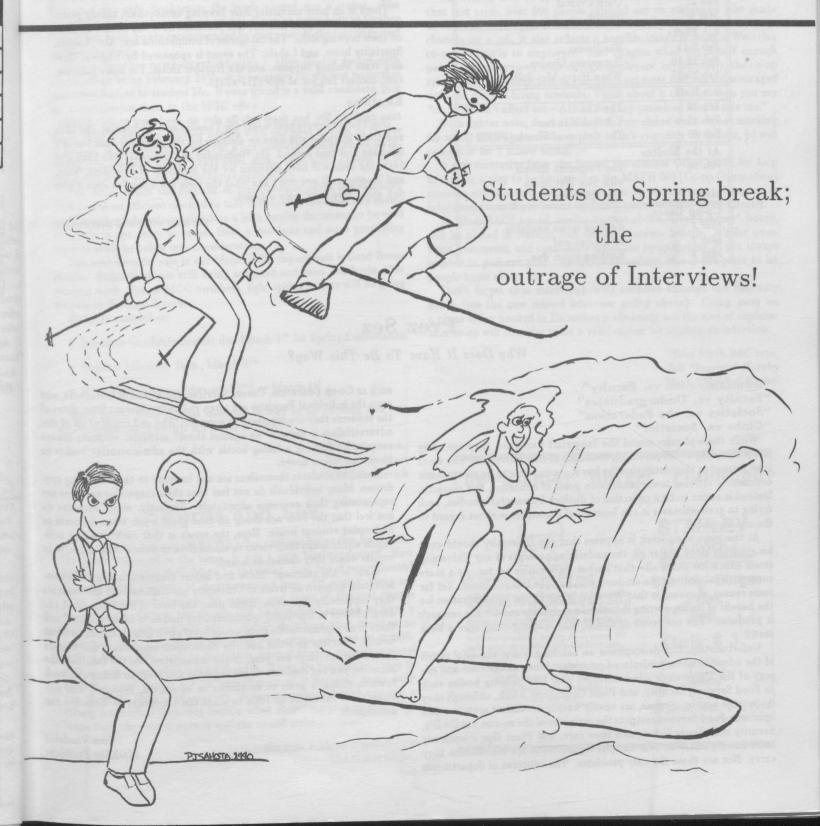
# math

Volume 52 Number 3

# February 9, 1990



# LookAhead

mathNEWS	
Feb 26	Issue #4 production night
Mar 2	Issue #4 hits the stands
Mar 12	Issue #5 production night
Mar 16	Issue #5 hits the stands
<b>Cinema Gratis</b>	The second s
Feb 13	The Holy Grail
	The Meaning of Life
Feb 27	Dark Crystal
Mar 6	Sleeper
Fed Flicks	man Aller Martin and and the
Feb 9-11	Roadhouse
Feb 16-18	Dangerous Liasons
Feb 23-25	When Harry Met Sally
Fed Hall	The second manager of the
Feb 12	The The
Feb 15	Yuk Yuk's at Fed
Feb 26	The Grapes of Wrath (FREE !)
At the Shelter	
Feb 16	The Forgotten Rebels
	with The Wet Spots
Mar 1	The Phantoms
Co-op Dates	
Mar 1	Ranking forms available
Mar 2	Interviews end
Mar 2	Ranking forms due

## **Events**

#### Winterfest

Winterfest '90 comes upon us March  $1^{st}$  to  $4^{th}$ . The Feds will be erecting a large tent on the PAC patio. The party starts Thursday night with an airband contest and a hot tub. There are many other wonderful events happening, so be prepared to participate. Volunteers are still needed. Have even more fun—call the Feds and get involved.

## **Beer Brewing Competition**

There is an inter-university beer brewing competition taking place. Students from Guelph, Laurier, and Waterloo have the chance to show off their brewing skills. The categories of competition are; Ales, Lagers, Speciality beers, and Labels. The event is sponsored by EngSoc, Beer and Wine Making Supplies, and the Huether Hotel. For more information, contact EngSoc at 885-1211 x2323.

## Elections

Don't forget to vote next week! On Tuesday and Wednesday, the 12th and 13th, MathSoc will have an election for the positions that weren't filled the first time around. On Wednesday and Thursday, the 13th and 14th, the Feds will have elections for the positions of President, Vice, and Treasurer. If you don't like what the Feds are doing (or even if you do), make sure your voice is heard.

the man without a pseudonym

# **Prez Sez** Why Does It Have To Be This Way?

"Administration vs. Faculty"

"Faculty vs. Undergraduates" "Societies vs. the Federation"

Societies vs. the rederal

"Clubs vs. Societies"

While these phrases sound like Imprint headlines, they are sadly just a sampling of the prevailing attitudes at this University. The more time I spend at this institution the less it seems to me to be an academic community striving towards common goals of education and research. Instead it seems to be a collection of distinct bureaucratic bodies, each trying to grab whatever it can from all of the others without regard to the consequences.

At the most basic level, it appears that the University should exist for students alone. After all, the underlying precepts of any University stress education above all—that's what Universities are for. At a more concrete level, it is we the students who pay the fees to attend. Yet for some reason, the truth is that Waterloo is run by the administration for the benefit of its supporting industrial community and for the research it produces. The net result of this is that teaching must take a back seat.

Unfortunately, this de-emphasis on teaching is not the final result of the administration's misplaced priorities. Much of the time and energy of the University's administrators goes into running bodies such as Food Services, Security, and Plant Operations which, although they do provide worthy services, are openly hostile to student activities and opinions. Food Services restricts the activities of the on-campus C+D's, Security mercilessly tickets and tows cars, and Plant Ops relentlessly tears down posters all over campus regardless of the information they carry. Nor are these the only problems. The concerns of departments such as Co-op Education, Career Services, the Board of Governors, and even the individual Faculties are often radically different from those of the students they are supposed to exist for. The end result of all of this adversarialism is today's "us against them" attitude: students always seem to be fighting a losing battle with the administrative bodies to have their voices heard.

Even the students themselves are not immune to this infighting syndrome. Many individuals do not feel that their respective societies are representing their concerns adequately. Similarly, many societies do not feel that the Feds are doing all that great a job when it comes to addressing student issues. Here, the result is that each group or individual either keeps their views to themselves or voices their concerns in venues where they cannot be heard.

What is the solution? More and better communication and representation between all levels of University government and the students they supposedly represent. Right now, the level of involvement of undergraduates in University administrative bodies is nil to minimal and there is no representation from upper-level governing bodies on student boards. Student societies and the Federation must share much more than a few meetings per year. If the administration, the faculties, the societies, and the students all get together and start to define and work towards common goals of excellence in education, research, and services, there should be no limit to what the University of Waterloo can accomplish.

> Tom Vandeloo MathSoc President

# Où-est le Bonhomme?

## MGC visits Québec City

A busload of Mathies including numerous grads returned safely from an adventurous weekend at the Quèbec Winter Carnival. The grads quickly adapted to frigid climate by adding long johns to their dress code and by consuming potent liquids, such as Caribou, for medicinal purposes.

Walking through old Quèbec City makes you feel like you are visiting an historic French town. The only negative aspect of the trip was the fact that the only Bonhomme the grads viewed was a statue. The question remains: where is Bonhomme? If you've never been to Quèbec City it has been highly recommended by every one of the travelling and sightseeing grads.

Nominations are being accepted for the J. Allan George Award, with the deadline being February 28<sup>th</sup>. It is an award for student leadership and contribution to student life. If your friend is a valid candidate, pick up a nomination sheet in the MGC office.

MGB tickets have been on sale all this week and will continue next week. The tickets are \$35 per person with payment in cash or cheque accepted. If you have not filled out a grad directory form please do so. Forms are available at the ticket sales desk. Your name cannot be in the directory if you do not authorize permission.

The MGC needs the services of technically-oriented individual(s). Our goal is an efficient method to take the many Grad Directory sheets and transform the information into a high quality document to be used by grads in the years to come. Both a database and word processing aspects must be taken into consideration.

The next item for sale in our Memoribilia department is Grad Boxer shorts. Suggestions are still being accepted and sales will begin after reading week. For all MGC members, light spring jackets will be going on sale in the near future.

Dates to remember:

• Intent to Graduate Forms: due March 1st for Spring Convocation

• General Meeting: Tues., March 6th

• Grad Pub: Thurs., February 22nd or March 1st

Once again, have a great weekend as well as an exciting and safe spring break (next week). Au revoir mes amis!

> MGC Chairpersons Kelly Start Emil Minarevich

# Swords and Sex

I was sitting in the mathNEWS office contemplating sex; I was holding my broadsword at the time. It was a very big broadsword. How big is your broadsword? More to the point, how big is your sheath? There is a big shortage of sheaths around here. Of course, there are a lot of daggers claiming to be swords, and many of the real swords are bastards. Only a few swords will be fortunate enough to have a well-fitting sheath and vice versa. Safely sheathing your sword is an important skill. Improperly sheathing your sword can lead to complications later in life, such as rust spots, warped blades, and other metal defects—not to mention rotting sheaths. If you are fortunate enough to possess a good leather sheath remember to oil it properly, twice daily (an anti-rust foam is suggested). It is recommended that you use a strong methodical thrusting motion when sheathing your sword. Continue until the sheath squeals and the sword melts.

> the man without a pseudonym The Great Gizmo bob

# SAC stays SAC, not SCAB

Just as a word of reminder for those of you who were asleep when picking up the Want-ads, there is a new missed interview policy being implemented this term. If you miss 1 interview for no real reason (like "Well, gee, I didn't see my name on the board"), you will not be able to use a number 1 ranking (i.e., you won't be able to participate in a 1 to 1 matching with employers); your highest job ranking will be 2. If you miss another interview, you will still be able to continue interviews, but will not receive credit for the work-term.

The reason that co-op is getting serious about missed interviews is that last term, over 500 people skipped out on employers who made an effort to show up and see students. Not only does it screw up your chances for a job, it also reflects a horrible image of what a Waterloo co-op student is to employers. Just imagine what happens if enough people skip interviews with enough employers: mysteriously, the co-op system slowly deteriorates as employers get more and more discouraged with the mess of hiring students. Think about it the next time you say "oh, it doesn't affect me—ABC Company promised they'd hire me."

On a lighter note, due to the weird, convoluted work-report marking fee issue, we are proud to say that: a) it's currently \$8 dollars, b) will remain so for 2 school terms.

A representative from the Sexual Harassment Office asked for help in writing a play to be presented in the MATH 000 (Co-op Orientation) sessions about sexual harassment on co-op work terms. If anyone is interested (even if you're not on SAC), please contact them directly.

A "Dear SAC" board, similar to that of the "Dear Library" board, will be placed in Needles Hall on the interview boards. It's for questions, comments, and complaints about the co-op system. If you always wanted to pull out your hair about something, this is the place to let people know about it!

Don't forget that interviews will continue through the February break (see the new missed interview policy above). Going away on a plane ticket booked in December is obviously not the sort of explanation co-op will consider to be a valid reason for missing an interview.

> Your Math SAC reps, Jeff "Fearless" Hornby Mark "Moishe" Kerbel

The Stanley Burger Philosophy

At Stanley's we believe that each customer deserver 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 burs. We take pride in putting only the best into everything we make.

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# **Prof Quotes**

We had a much larger selection of prof quotes this week, but there are still a disproportionate number of quotes proceeding from those classes in which are enrolled members of the staff. How 'bout it folks? I'm sure there must be at least a few people awake in at least a few of those classes. Or do you not bother to listen to the prof? Is that a stupid question?

"The definition of a tensor will scare the hell out of anyone who isn't a pure mathematician by birth."

G. Tenti, AM 361

"You should not be concerned by the fact that the constants are variables."

S. Lipshitz, AM 353

"He's not boring, I'm boring. He's bored."

I. Szarycz, RUSS 102

"If you read some of those muscle-building magazines, which I constantly do  $\dots$ "

Dr. Bols, BIOL 473X

"Now we're all ready to get this sex."

Dr. Bols, BIOL 473X (Mammalian Reproductive Physiology)

"I love that term 'by inspection.' That mathematically means when you don't know what else you can do, you can look at it and it looks back at you."

## Larry Smith, ECON 102

"Approximations which have a bound on the error are called Science. Approximations which have no bound on the error are called...Economics or something."

Shadwyck, MATH 230A

"Every time I talk about the beauty of math they look at me like I'm senile or something... or worse.""

Dunkley, C&O 270

"It's the sort of thing you take to someone in the Pure Math Department. Shove a little between the cage bars. They love doing this sort of thing."

Ian McGee, AM 343

"We'll come back at twenty-five to nine—that's when the big hand hits seven."

J. Killoran, ENG 208B

"Most professors are failed comedians anyway."

J. MacKay, STAT 230

"Try to do it the easiest way; that's the first axiom."

### S. Burris, MATH 234A

"Suppose you want to do this... you are the prof, and you want to massacre your class by doing this."

G. Tenti, AM 361

"We'll do the engineering proof... it's true for these two nodes; therefore it's true for all nodes."

D. Wood, CS 340 (pointing to two nodes in a binary tree)

"Not that you'd do these bonus questions for extra marks—but because you find them immensely pleasurable."

#### D. M. Jackson, C&O 230

"As soon as you see a difference of squares, you start to salivate, don't you?"

S. Vanstone, MATH 135

# **CSC** Flash

In which drivel is spewed forth in voluminous quantities

Since the last CSC Flash, very little has happened. In particular, no tea or doughnaughts have been served. Well, at least none that the CSC is/are aware of. Mike Donat did give a successful talk on message passing and the environment at Microsoft. Successful being defined as "so many people showed up that we ran out of doughnaughts." The preceding sentence would seem to contradict the one before it, but, since the bit about Mike Donat was mentioned in the last Flash, it's old news, and technically, no new doughnaughts (or tea) have been served since then.

There will shortly have been an executive meeting at which many things will have been discussed. Check the newsgroup uw.csc on your favourite Unix(tm) box for details. It might even be interesting. For example, the minutes of the last executive meeting revealed to the world for the first time that Trevor Green eats worms. (Not news to those already acquainted with Trevor.) There may be tea, but doughnaughts are unlikely at the executive meeting.

There will also shortly have been a CSC-sponsored trip to FASS. Seeing as FASS is on campus, it won't have been much of a trip, but one of the conveniences of being a CSC member will have been that you won't have had to get your ticket yourself.

"10 years ago in the CSC Flash" will not be seen this week because I can't be bothered to find an old copy of mathNEWS.

The CSC office still hasn't recovered from the massive clean-up left over from the sordid Calum/election scandal. It looks like it's permanent.

Calum T. Dalek

## Waterloo Co-operative Residence Inc. A Housing and Dining Alternative

Features:

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- Low cost accommodations.
- Organized social/recreational activities.
- · Residence rooms (single and doubles).
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- Housing is alloted based on membership
  seniority and application date.
- · Meal plans.
- · A place to learn and grow.

For further information write to or call:

Admissions Co-ordinator Waterloo Co-operative Residence Inc. 268 Phillip Street Waterloo, Ontario N2L 6G9 (519) 884-3670

# History of the World

This past weekend (Feb. 2, 3), a wondrous, a mystical event occurred. The great Scunt gods, known collectively as Psychosys, sent many groups on strange quests. This was the Winter '90 Engineering Havenger Scunt. For the second time in University History, a (mostly) Math team, Math Hysteria took part.

The mo	ost prominent participan Michelle Robb Daphne Greismann Penny Watt John Morton	ts were: - The Boss - Costumes and Co-ordination - Treasurer - Village Co-ordinator
	Shaggy	Mike Buckley

Dave Weil Doug Hopkins Steve Smith Dave Nuttall Mike Buckley Rob Bell Morgan Johns Craig Hughes

Dave Gibbs

There were others, but this article shouldn't be too long.

The theme of the Scunt was "The History of the World." We performed many twisted acts, some more twisted than others. Here are some memories you can contemplate:

- Adam and Eve ate the apple (Doug / Daph)
- back to nature in the CC (Doug / Daph)
- making a Rob Lowe's video (Doug / Shaggy)
- Domer, the Wonder Hump (Doug / Penny)
- Snow angels...face down...naked...shrivel...(Mike / John)
- Grunt the great god having a thing for Eve (Grunt / Daph)
- Where's my big salami? (Doug / Daph)
- Hercules and Newton (Morgan / John)
- Vanna White (Dave Nuttall)
- Psycho-Bitch from Hell kills Romeo? (Daph / Lance)
- Street Samurai / Snake / God of Death (Dave)
- Ring road torch run (Doug)
- Where's my Tylenol (ALL)
- "We need how many 24's ?!" (Michelle)
- Is this REALLY legal? (Security)
- "Tell me where Daphne is. O.K. 2000 points" (Grunt)

We would all like to extend our thanks to Psychosys and the other teams, and we look forward to participating again. The top five teams were:

- 1. Enorgy
- 2. Chemandoes
- 3. Toast
- 4. Screwdriver
- 5. Math Hysteria

The man without a pseudonym

# VapidFire

## Death of a Nation

MADRID — The tiny mountain nation of Andorra was tragically annihilated when a herd of elephants destined for the Madrid Zoological Gardens strayed off the highway. Said zoo director, Anne E. Ball, "Like, I don't know what happened, it was, like, one moment trooping down the highway and the next thing you know, so long Pyrenees! Giggle!" Neither of the surviving Andorran citizens could be reached for comment.

BEIJING — Things are returning to normal in China as, after a period of tranquility, 100 students were executed in Tian An Men Square for making faces at a portrait of Mao Zedong. Our reporter could not be reached for comment.

TEHERAN — A new show on Iranian Television is being aired, starring a 12-week-old baby who claims to be the reincarnation of Ayatollah Khomeini. "Khomeini" has asked his listeners for \$12 billion U. S. so he can complete his arms deals by March 31, or Allah will call him back.

WEST PALM BEACH — The share value for Maple Leaf Gardens on the Toronto Stock Exchange is being used as a monitor of Harold Ballard's health by doctors caring for Ballard at Maple Leaf Hospital in this Florida resort. They have hooked up a direct line to the Exchange floor and say they have so far been alerted of three blood vessel dilations and one potential heart attack by sharp rises in the price of the shares. Dr. Dick Less commented, "We'll release them when it falls below \$15."

u(w) — Normally quiet campus life was disturbed on Tuesday when the Right Wing, quasi-violent, pretty darn radical group SHEEP **AGAINST NORDIC SWEATERS** staged a rally in the Arts Library. One woman was injured when her sweather was removed by angry sheep who chanted "Give us baaack our daaaddy!"

> Mr. Death The Griffrimmer

## **Timbits for All**

The Winter '90 MathSoc Car Rally went off without a hitch (as opposed to the organisers' planning run, which didn't). 6 fearless teams ventured forth into the wild wilderness around KW, avoiding Bright, Ontario (see comment above), and made it back to East Side Mario's with clean cars, 6 non-chocolate timbits, and old newspapers (and no dog horror stories—also see above).

The final winners were Carol Vanderburg and Mark Young (together with 2 friends), followed by Mark & Chrys (with someone stuffed in the trunk). Third place was tied by 2 teams with 2 people: Brent & Chris (with 3 too many wires) together with Katy & Glen (time: 5 hours, 10 minutes). Fifth place went to Allison & Rich (who were the only ones to know who developed the Connestoga College rink), and Jeff & Todd winded up the tour (with the quickest overall time, 2 hours, 35 minutes).

Congrats to all for participating and hanging around the restaurant while we used our exacting, accurate (and sometimes improvised) judging rules to calculate your final scores.

Fearless Jeff and Moishe, your organizers

## Masthead

Isn't this wonderful. It's not 0:07. Yeah! This is a good thing. (I think.)

Not so wonderful. We're reprinting this and it's now 2:17. We just can't win.

The most excellent people who came out and helped tonight were: Dave Nuttall, Dan Astoorian, Steve Smith, Takashi Toyooka, Doug Hopkins, Glen Reesor, Penny Watt, Koorosh Shahrokh, Jeff Newton, and Simon Hèbert. Thanks to all and to all a good day, eh.

Thanks to Marion and Graphic Services.

# Letters to the Editors

## Shocked by Ad

It really surprised me, when reading the Jan. 26, 1990 edition of mathNEWS, to see a full page advertisement on page 5. Now you might say that mathNEWS has carried ads before (Stanley's Burgers springs to mind), but those ads were about 1/8 of a page.

So everyone's feeling the crunch of underfunding and soon math-NEWS may have an advertising section for companies, etc. We have enough entities trying to get our attention and it was comforting to read a publication that was not full of it. I don't think you have to stoop to those lowly depths.

4A Math/CA

Editor's note: The following letter has been condensed because of space considerations.

Dear mathNEWS editors:

I was disturbed by one of the article in your issue of 26 January and would like to raise some points for your consideration.

The article that bothered me was titled "How To Get A Girl".

The text of "Girl" offers, in the guise of advise, straightforward exaggeration of obnoxious and sexist behaviour. Let us be charitable and assume that the author was attempting to sarcastically mock such behaviour and send the message that is wrong. It is only in its effect that such a piece can be judge, and I think it takes a keener satirical pen than you or I wield to pull it off.

Suppose a reader decided that the article was really mocking those who think that such obnoxious behaviour will succeed in its stated aim, namely, to "get a girl". In other words, the reader concludes that sexism and aggression is wrong only because it doesn't "work". The idea of woman as objects to be acquired is reinforced.

There is also the problem of long-term effect. What about this suggestion – completely false, by the way- that "the faculty is speaking about about lowering admission standards in order to equalize the male/female ratio"? How many reader will remember, the next time that the subject of affirmative action comes up, that they read that in a humourous article and it wasn't to be taken seriously?

What reactions might female readers have? Some might smile ruefully, though they are unlikely to take much pleasure in descriptions of behaviour that, on a milder scale, they are all too likely to encounter. The general effect, I think, is chilling: discussion is inhibited, and a sense of community, of belonging, is violated.

I'm sure you're aware that women make up only 30% of the incoming first-year class. You may not be aware that the percentage drops steadily through second, third and forth years. There's no single obvious cause of this, and we'll never be able to point to an article like "Girl" and say that it was responsible for this incident of sexism or that woman's decision to drop out. But I think that, in small ways articles like this are contributing to the problem.

We must not underestimate the power of words, particularly when they are committed to print.

Prabhakar Ragde

## **ISSN 0705-0410**

mathNEWS is normally a bi-weekly publication funded by and responsible to, but otherwise independent of, the Mathematics Society at the University of Waterloo. Content is the responsibility of the mathNEWS editor; however, any opinions expressed herein are those of the authors and not necessarily those of MathSoc or mathNEWS. Send your correspondence to: mathNEWS, MC3041, University of Waterloo, 200 University Ave. W., Waterloo, Ontario, Canada, N2L 3G1, or to userid mathnews@watserv1 on USENET.

Editor: David Weil and Paul J. Sahota

# Ultraclassifieds

Denise: Just how did you know the layout of the Men's washroom?

Rutabaga & Moo

Watch out for large dogs in stables (especially if you're driving a small Honda).

Rallyers in future car rallys

My friend, don't be a loser. Come to my seminar! I tell you how to make meeyuns!

Tom Vander100

Ed, you just admitted to me you were gay. This disturbs me.

Your roommate

#### **NEWSFLASH!**

Jo Kee Ner, a third year UW student, passed away in his CS 212 class last Thursday. The autopsy report said simply: "He died in his sleep." Said his best friend: "He just couldn't take it anymore. Joey once told me that he found the first week of CS 100 more stimulating."

"Does anyone know why there was this tall guy with long, blonde hair running around the comfy lounge on Friday wearing a raincoat and no sign of pants? I'd hate to see what he had on under the coat."

T. Stephien, CS 444

From The Olympian To Molly Ringwald: "What about sound effects?"

From Molly to White Rabbit: "You didn't shave!"

From White Rabbit to Molly: "Ya, well your feet are cold!"

FYI Operation Korma-alpha commences in 5 days, with Korma-beta following 2 days later. Be ready.

Q

"Margaret loves Mattie-pooh"

EV III & Murdo

Stupid cow seeks huge mutant with inferior blood-type for footwriting and strawberry consumption. Muscular face preferred. Serious replies only please!

Woman in green seeking large salami. If found call Eve.

Hey, Mike L., did you figure out where to stick it?!? Try the south side of the equator.

C.C.

Hey! Guess what!! MB was early Jan 17 1990!!!

Mistress Di, we your willing slaves try to keep you amused and awake, but we anxiously await the whips and chains. But please Mistress don't forget to bite this time.

your men servants

Chris I know you're not cheap, but after denying not being sleazy, what's guy to think.

# **Faculty of Mathematics**

## Dean's Honour List

In recognition of outstanding academic achievement throughout their undergraduate careers the following students will "GRADUATE ON THE DEAN'S HONOURS LIST" at Spring Convocation, May 26, 1990 and have their names displayed in gold on the walls of the Faculty Colloquium Room (MC 5158).

RUSSO Giuseppe (Actuarial Science & Statistics)

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SWIFT Sharon Lynn (Math/Management Accounting/Information Systems)

In recognition of outstanding academic achievement during the Fall/89 term, the following students qualified for the Dean's Honours List.

ABRAHAM Matthew Lancaster, ALLEYNE Jason C., ANDO Seiji, AU-YEUNG Selson. BELL Carolyn Mae, BIBBY Katherine Anne, BEIR Michael Paul, BRADLEY David M., BRUNSTING Raymond Joe, BUCKLEY Michael Andrew, BUTCHER Thomas Matthew David, BUTTON Darryl Thomas, CAULBY Brian Marcus, CENTORE Paul Matthew. CHAN Sze Sze Ada, CHAN Franky K.L., CHAN Shung Fai Jimmy, CHAN Steven, CHAN Tox Kin Michael, CHAN Wing-Leung, CHANG Su-Chin. CHBUNG Shuk Man Annie. CHRISTENSEN J. Daniel. CHUI Bo Yue Janis, COLBMAN James, COLMAN Ian Richard, COOK David Gary, COONBY Christopher William, CRAFTON Bradley D., CUSCIANNA Aldo, DAN-TOWITZ David J., DARVBAU-GARNBAU Nicolas, DAW Trevor A., DBAN Michael Philip, DEMAITER Blaine Mary Rose, DITULLIO Giuseppe Carmine, DRUBRY Jeffery Douglas, DUCHARME Dale Matthew, BBBO David Serge, BDELSON Robyn Arlene, ENGLANDER Mathew Blair, BRICKSON Julie B., FARREL Glen Robert, FISHER Monique A., FONG James, FONG Wai Leung, FRENKEL Leonard, GAMBLE Steven Todd, GAUDET Dean, GIB-SON Geoffrey M. GLAISTER Ian Matthew. GOERTE Steven J., GOOI Roy Chu Nan, GO-SAI Paresh, GOURLBY Rene Stephen, GOWAN Christopher Brent, GREEN Stephen Joseph, GREENSPOON David I., GREER Kevin Glen Roy, GRIFFIN Kenneth Anthony, HAMANN Francois Richard, HAZENBERG Graydon Hendrik, HENSON Kas Anne, HILL Betty-Jo, HODGE James Robert, HORNBY Kathryn Blaine, HSU Leon Cheng-Lin, HWANG Robert, IRSCHICK Bruce Christopher. JACKSON William Brnest. JACOBS Lester Urban C., JOHN-STONE J. Doug, KABTHLER Richard, KAMAL Ramin, KARSTEN Richard Harry, KENNES Carl Louis, KILBREATH Toby Diane, KOELLER Judith Ann, KONG Wun. KRAY Jansen KUCHAR Olga Anna, KUCHARIC Cheryl Marie, KUNZB Herbert Bdward, KUSTERS Norbert Paul, KWOK Chi Wai William, LAFFRADI Lisa M., LAM Wilson Chi Ko, LAM Wing Tat. LAMB Julianne Krystal, LAPPAN James William, LAW James To-Cheng, LBB Gregory Thomas, LBB Simon, LEPIANE Peter Attilio, LESLIE Christina Sunita, LEUNG Kwok Wai, LBUNG Yollie Yolanda Yuk Yi, LIU Wayne Biao, LORBBR David A., LOWACHEB Sean, LU-OMA Darren Alan, MA Kin Wai Wallace, MA Wai Man Theresa, MACCHARLES Ross Paul, MACFARLANE D. Kent. MACLELLAN Carol Marie, MAK Karen, MAMO John R., MAR-SHALL Brian Robert, MCALLISTER Michael Joseph, MCKENZIE Andrew Craig, MEHTA Atul Kishor, MBTZGBR Christine L., MICHAIL Amir. MISTRY Chetna, MOHAMMED Asad, MONTBIRO Manuel Jules Savio, MOORE David Alex. MOORHOUSE Timothy Bruce, MORTON David Kennedy. MURPHY Danny Kevin. MURRAY Bithne M.G., NAUMANN Bernard Richard, NBWMAN Geoffrey Graham D., NBWMAN Micheal William. NG Kai Yuen Kelvin. NG Lai-Mei, NG Ngai Hung Jimmy, NGAI Sek Ngai, OOI Soo Liang, ORPEN Derek Neil, PARKINSON Scott Terrance, PARSONS Kimberley Joy, PATCHETT Mark B., PAVAN David John, PBIRCE Stephen, PBNNBR Michael Brwin, PIECHOCINSKI Peter, PIGNAT Daniel Joseph, PILLE Geoffrey John, PLUMB Colin Christopher, POMERLEAU Guylaine. POON Stanley Ka Hung. PORTER Jonathan, POWOJOWSKI Miroslaw Ryssard, PTASHNY David, RAVIGNAT Damien, RICHARDS Michelle Fiona, ROOK Harvey, SANTOSUOSSO Kevin, SASHBGYI Andreas Istvan, SCHIEDEL Juanita, SCHOFIELD Micheal B., SHEN Ann, SHINER Jeffrey Allan. SHIP Harold Jeffrey, SIDDIQI M. Faisal, SIU Steven Chi Fung, SMITH Kevin Edward, SO Cheuk Man Henry, SONG Charles J., SPENCER Scott William, STEVENS Warren Geoffrey, SUM Alex Poon-Kwan, TAKAHASHI Kewin Ken, TALIB Shams, TAN Ken Seng. TAVES Christopher David, TONG Andrew Ka Yin, TRINH Van Tai, TSANG Glenn, TSANG Wing Yin Teresa. TY Kich Tsung, ULBRICH Michelle Sylvie, VANDERPOST Gerald Peter, VBACH Bric Hugh, WAN Yuen Wai Christopher, WANG Herman, WANG Nan Daniel, WEATHERHEAD Thomas Andrew, WHITE Thomas Boothby, WIELOWIEYSKI Merek Stefan. WILLIS David Timothy. WILLMS Allan Richard, WONG Bric Fong. WONG Man Tsun, WONG Tang-Chit, WONG Vince, WOOLRIDGB Dale Nelson, WU Dennis Chi-Yun, WU King Kwong Felix, YANG Peter Shawn, YAP-CHUNG Nicola Grace, YBUNG Alex, YOUNG Carmen Min. ZAKINTHINOS Aris, ZHAO Linda, ZHBNG Luo Quan. ZUCCHBRATO Robert Joseph

## About mathNEWS

There is a small group of people that gets together every other Monday night to generate the periodical that you hold in your hands. There are a number of excellent reasons why you should come out to a math-NEWS production night and help out.

- We need help! We need both skilled and unskilled labour. Have you ever wanted to write an article. If you feel that deep down inside, you may have the potential to write something silly or profoundly funny, we would like you to come out.
- mathNEWS can teach you the fine art of last minute production. Come out and experience the thrill of racing against deadlines. If you ever wanted to acquire the fine skills required to accurately wield an X-acto knife, then mathNEWS is for you!
- Being on the mathNEWS staff is a sure route to immortality. Once you have written in mathNEWS your words are permanently recorded in the annals of all time. Each issue is sent to Ottawa to be kept until Canada fails and all other memories of our age are lost to the winds of time.
- mathNEWS staffers are well fed with the finest quality pizza.
- The single most important reason for coming out and contributing is that it is a lot of *fun!*

The LookAhead section of this paper contains the dates of the next few production nights. If you can't make the next one, come out to the one after that. Be a part of the great mathNEWS tradition at U(W).

The Editors of the Sword

# **Proof of the Week**

Consider the product  $(2)(3)(5)(7)(11)\ldots$ , which contains as a factor all prime numbers. Clearly, this product  $= \infty$ , i.e., if x is prime, then x divides infinity. Equivalently, if x does not divide infinity, then x is not prime.

Also, Euclid's proof that for every prime number there is a greater prime number is well known, and need not be reprinted here. Hence,  $\infty$  is the largest prime number.

But, since  $\infty$  is prime, there is no integer x which divides it. Hence, there are no prime numbers.

Johnny Mathless



Noticed how Math Profs begin to look like Bella Lugosi around Midterns?"

# Now!

Sitting in the C&D, with grazing Bovines watching me. Looking Blank and chewing cud, they never catch the smell of blood.

Big Blue Butchers take the best, corporate vultures pick at the rest to help construct their ugly barrow, they break our bones and suck our marrow.

They build their towers from our brains to protect them from the Earth's remains. They take our souls and pay us cash, so we will emulate their stash.

And so perpetuate the bile that chokes our planet with a smile. While fatty bodies grasp and suck, their soulless minds don't give a f\*\*k.

The one salvation lies with us. We ought to stop it, in fact we must. All our effort, and nothing less, or rot in hell with all the rest.

If we don't clean up, no one will, and my kids shouldn't die in swill. They shouldn't hide from the Sun, and public beaches should be fun.

Country streams without brown foam, and healthy woods in which to roam. They shouldn't dream of atomic lights. (A dream I've dreamt a thousand nights)

My children happy, my planet clean, prospects better than they have been. We have to work, *you* have to see, because it's down to you and me.

Caleb J. Howard

## You Have Problems!

- You know you have problems when you don't quite know what goes into writing a resumé.
- You know you have problems when you're worried about what you should do in an interview.
- You know you have problems when you're still not able to identify your special skills.

You don't need to worry, however, because we have the answer for you: The Student Career Advisors. We may not have the answer to all of your problems, but we sure can help with some. Your S.C.A. is a student volunteer trained to help other students in areas of resumé writing, interviews, career planning and a lot more. The Math S.C.A. is located in room MC 3035. Her office hours are 1:30pm to 3:00pm on Tuesdays and 1:00pm to 2:30pm on Thursdays. Just drop by. No appointment is needed.

See? No Problem!

# Why They Call It "Advanced Honours"

We had only known each other for a matter of minutes, but already the class had agreed on one thing: Monday morning was a lousy time to start a math course. A few people scribbled madly into notebooks; others leafed restlessly through confused notes; most of us stared blearyeyed at the chalkboard at the front of the room.

Eventually (and to the dismay of many in the room) the door at the front of the room did open as an elderly, distinguished-looking gentleman entered and carefully placed his lecture notes on the desk. I sat up and scrambled to find a pencil.

"I," he began, "am Professor Neumann. My office is MC 7042. My office hours..." By this time I had managed to find my pencil, and I started taking down what Professor Neumann was saying. As I hurried to keep up, it dawned on me that I was no longer in high school.

The entire room focused on the tiny corner of the chalkboard where Professor Neumann was scribbling. It was evident that I was not the only one in the class who did not understand the plethora of Greek letters crowded on the board, as I could hear confused mumblings of, "What's that he's writing?" and "I've never seen that notation in my life!" from behind me. Professor Neumann turned to face us.

"This is how your final mark will be calculated."

About a dozen people got up and left the room. I glanced at my watch and discovered that we had only been there for three minutes. I mused to myself that at this rate the room would be empty thirty minutes into the lecture.

"We shall define a calculus as the set of properties of a real-valued function of one or more real variables," continued the professor, ignoring the exodus in a manner which suggested that he was quite accustomed to people walking out on him. From left to right Professor Neumann systematically filled the chalkboards with complex formulas which nobody had ever seen, yet which were affectionately labelled "Review" at the top of the first board. Perhaps he's only kidding, I thought to myself.

Forty minutes later, Professor Neumann stopped writing and faced the class once again. "Here is assignment number one. It is due next Friday." With this he removed a stack of papers from his briefcase and let it fall to the desk with a resounding "Thunk."

Slowly I walked to the front of the room and picked up an assignment. I looked at a question at random:

Let S and T be nonempty bounded subsets of the real numbers. Prove that the supremum of the union of S and T equals the greater of the supremum of S and the supremum of T, and that the infimum of the union of S and T equals the lesser of the infimum of S and the infimum of T.

I noticed that many of the people leaving the room had not bothered to pick up an assignment. I wondered why I myself had not left at the start of the lecture. I attributed it to sheer stubbornness.

Taking a deep breath, I hurried to get a word with Professor Neumann before he left the room.

"Do your lectures always go at this pace?" I asked hopefully.

"Don't worry," the learned man replied with sympathy in his eyes. "Things will pick up on Wednesday."

Johnny Mathless

Anna V. Math S.C.A.

# How to Solve Logic Problems

For several decades, the logic problem has been a staple of puzzle books found in news-stands all over North America and beyond.

Solving a logic problem involves getting everything out of the few clues that you are given to work with. A grid, like the one one with this week's logic problem can aid immensely. Some of the pointers below may seem obvious now, but they can be great stumbling blocks for novice solvers (and for some more experienced ones too).

- If event A follows event B, then B can't be first and A can't be last. This can be expanded to more events.
- If items are deemed to have separate properties (e.g. registered in different faculties), then no two items may have the sam<sup>v</sup> property. In this example, two people won't be in the same faculty.

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	D a v e	D o n	K a r e n	P a t	R i c k	om til mod	D a v e	Don	K a r e n	P a t	
Arts	X	×		X	X	Arts	X	×		X	×
Eng.					X	Eng.			×		X
HKLS						HKLS			X		F
Math		-	.5.			Math			X		
Science						Science			X		

- 3. Watch for clever tricks that indicate that two entities are distinct. An example would be saying that if activities occurring concerning a computer, where we don't know the owner, having only a clue that reads 'Jerry went to help fix his *friend's* computer' indicates that Jerry is not the owner of the computer.
- 4. If you have come to the point where you have to make a decision as to two or more paths, copy what you already have in your grid onto a new grid, make an assumption, write it on the new grid and carry on, as best you can. If you come to a contradiction or where you have no possibilities for a row or column, then go back to your original, make a new assumption, remembering not to use the assumptions that didn't work before, and keep going. If either you are left with no assumptions to make or you solve the puzzle, the path is straightforward.
- 5. There are times when you must repeat the use of properties. For example: In a problem, there are five people, each being of one of three categories (male, female, other). This means that there will be repetitions, usually resolved by indicating the numbers of each category. The grid for this system would include a block that looks like this:

115:	D a v e	Don	Karen	Pat	Rick
Male	0		×		X
Female	×		0		X
Other	X	0	×		0

 Constantly cross-reference. If you have two objects that are the same, then all the properties of one belong to the other and viceversa.  If only x number of elements are eligible for x number of uniquely mapped characteristics, then eliminate all the others for the characteristics involved.

I hope that enjoy working on these logic problems. Everything should just fit together, just no obviously. These are just some general guidelines and, if you are observant, you will see some more ways to solve these problems. If you want to give more suggestions, or you want some more help, just drop a line to the Nutster, care of mathNEWS, in the

# Logic Problem #1 The Nutster

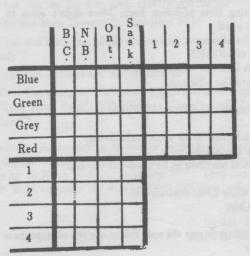
We here are mathNEWS want to try something new. The logic problems that we plan to have in mathNEWSare going to be originals produced by me, The Nutster. Logic problems are a regular feature of puzzle books that are sold on the news-stands for decades. Please let us know if you like these, because we want to know if these are popular. You may submit your answers (not the grid) to the BLACK BOX on the third floor of the math building, before the next production night. Now on with the first problem.

As I was driving along the Trans-Canada highway on my way to Ottawa at 3am., I noticed four cars. The licence plate of each was issued in a different province, and each car was a different colour. From this and the information below, can you determine the province from which each car came, its colour, and in what order I saw them.

- 1. The car from British Columbia wasn't grey.
- 2. I saw the red car after the one from New Brunswick.
- 3. I saw the green car before the car from Ontario.
- The red car came from a province further ease than the car I saw third.
- 5. The colour of the car from Saskatchewan begins with 'G'
- 6. The car from British Columbia, which wasn't blue, was first.

This problem is rather easy for those that do logic problems regularly, and is mainly intended to give people who haven't done logic problems a feel of what one is like. You may want to use the grid provided to help you solve the puzzle. You may also want to read the article "How to Solve Logic Problems."

#### The Nutster



## 10 mathNEWS February 9, 1990

# Ode to Steve

As the S.O.L. fish looked upon the sea of emptyness He noticed that its inner depths were shallower than his own. Over in the distant abyss the others swam as he merely Sank.

As the Chicken danced the dance of death without his Head, the others looked upon him while cackling, Laughing, with their heads still intact finding other ways to Amuse themselves. After all, they were only chickens. The sun was rising but it was twilight at the same time. The end was nearing for the homeless Cucumber sprawled out in the Garden Of shruberries. It was almost like the end of all vegetables. What is life? Asked the lizard as the tire of the truck pushed him closer To the other Tire, And squished him. The baby within the confines of the saftey seat in the truck answered: Glurploogumpus, wanablouroid, Plthhhhhhhh. The mess was cleaned off the tire at the next gas station. Many more lizards asked the same question; however, No trucks were around to answer their demanding voices. 1?! The bullet joyously screamed thru the air Into the gaping jaws of The hungry Dandelion. Stupid flower. 2121 The C.S. major looked at the clock. It was 4:30 am. He thought of all the MONEY he would make if he graduated. The A.M. major fondled with his Pen. He thought of all the MONEY he would make if he graduated. The Actuarial laughed as he saw the first question in the brutal Exam. He thought of all the MONEY he would make if he graduated. The Artsie listened to his stereo. The Screaming Blue Milkmen From Mars didn't seem to sound so good At 2:30 in the afternoon. He thought of MONEY As the moth flew out of his plastic wallet. He only heard the Milkmen Screaming: Glurploogumpus, Wanablouroid, Plthhhhhhhh. 17171 The girlfriend came home after scubadiving. "Look what I found Steve!" He only looked horrified as he stared at the stiff Fish. "I found it while I was scubadiving." Deja-vu hit him hard.

"Strangest thing. It was the only fish in the sea of emptyness that was Sinking." ?!?!?!

This poem is an ode, hell its a god damn tribute to a good buddy of mine who used to be a mathie but transferred to arts this term. Actually, he had trouble getting into arts (don't let that sidetrack you). He is a fine example of someone who came to his senses and said enough is enough. He wanted to go out in public and say "Life is one big joke", and "I am an artsie" as one big sentence with many metaphors and not be laughed at. Because I am still a mathie and he is not, (notice the lack of transition) I figured that this was the only way I could express my true emotions for his ungoddly situation. He probably understands this poem but for the real people out there (mathies) please do not try to relate or even understand this because if you do you'll find yourself in the never ending line up to get into arts. As for me I wrote this after consuming some mind altering beverages so I leave you geniuses out there with a quote from the movie Platoon.

"Sheeeet you dum."

Crush or Kroosh whatever pleases you

**Recycle This Article** 

Ever seen a recycling receptacle, Billy? Well, your friendly Math Recycling gangbusters already have 1 in place (close to the C&D). Chris says: "Don't throw trash in it, you Maroon!" There are 8 more on the way:

- 2 on the second floor by the large lecture halls: 1 for cans, 1 for paper
- 2 on the fourth floor by MC4021: 1 for cans, 1 for paper
- 4 on the third floor between the C&D's: 1 cans, 1 paper, 1 hard plastic, 1 glass

The reason they're not there yet is that Plant Operations have to okeydokey them first ("shuffle, shuffle, shuffle").

For those of you C&D lounge slizards who wanted to know what the fu..., er, clanging noise was around 3:00 each Wednesday, it's the weekly "Sorting of the Cans" Ritual. We have to separate the tin from aluminum, as a) they won't take 'em unless they are, and b) we only get buck\$ for the aluminum, but only if it's separated (Tin men: no racial slurs intended here).

If you show up to help, *hint*, *hint* we can even let you in on the big Caramilk secret, as well as how to tell the difference between tin and aluminum cans. We'd especially appreciate if those of you in the not-quite-autumn-years of your academic career help out, since the current group consists entirely of people planning to graduate this spring (Yippee!).

(Serious appeal here...) If you have any earth-shattering (or otherwise useful) suggestions about recycling, there is a board by the Math-Soc photocopiers, OR if the pink office is anathema to you, show up on Wednesdays.

## Condensed Topic inserted here

WATROC is the Waterloo Recycling on Campus group. We are a bunch of people from different faculties/residences trying to co-ordinate our efforts. We meet Thursdays @ 6:00 in EL109. If you're interested come to (my seminar!) a meeting, or talk to me for more details.

> Chris Rosenquist, esq. C.E.O., Math Recycling (Isn't he title-hungry? - Moo)

# WATERLOO'S ALTERNATIVE TO THE MBA: Master's in Management Sciences

Apply your mathematical knowledge to become a manager in a technology-dependent organization or a consultant on challenging management problems in

Information Systems Management of Technology Operations Research (Manufacturing) Operations Research (Policy)

for further information, contact the Graduate Secretary, Dep't of Management Sciences Faculty of Engineering, CPH 4309, ext. 3670

# mathNEWSquiz # 3

Since the Squizmasters are both busy with FASS this week, I'm filling in for the administrative part of this. They did mail me solutions to last week's and a new squiz 'cause they knew I wouldn't have the time or inclination to do one up. The winner of this squiz is **Chameleon** who got 8 correct out of 18. The other submitters were: Macgician (5); The San Franciso '29ers (3); The Dairy Council (2); and Vistlik the Lampshade (2). I got seven correct, but I can hardly count my own solution since I'm marking them. The answers for mathNEWSquiz # 2 are:

1. Luke

- 2. It was blocking his view of Venus.
- 3. 39 1/2 foot
- 4. Fred and Betty
- 5. Mock
- 6. He had a thpeech impediment.
- 7. Mt. Elbrus, Soviet Union 18,510 ft (5)
- 8. The St. Lawrence Great Lakes Waterway.
- 9. Valdes Peninsula
- 10. Vostok, Antarctica
- 11. The Australian Desert
- 12. Pitcairn Island
- 13. Dan Quayle

d

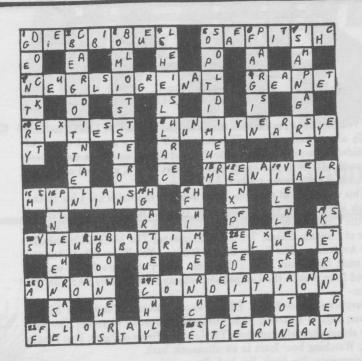
g )

- 14. Vice-president
- 15. Thomas Foley
- 16. Speaker of the house of representatives
- 17. George Mitchell
- 18. President pro tempore of the Senate

And now for the new squiz:

## Star Trek

- 1. What is Spock's father's occupation?
- 2. What crime nearly resulted in Wesley Crusher's execution?
- 3. Who brought the first tribble on board the Enterprise?



- 4. What military stategist is a hero of Rika's?
- 5. Who is the director of the Cetacean Institute?
- 6. How many Klingon vessels were destroyed by V'ger?

## Music

- 7. Name the members of "The Travelling Wilburys".
- 8. Who wrote the "Swan Lake" ballet?
- 9. Which two musical instruments are played by the Smothers Brothers?
- 10. Who composed the music for "The Sound of Music"?
- 11. What year was the first issue of "Rolling Stone" published?
- 12. What was David Bowie's name at birth?

## Movies

- 13. What was Woody Allen's birth name?
- 14. What was the last film Elvis Presley starred in?
- 15. Who was born Thomas C. Mapother IV?
- 16. What was the name of the community attacked by "The Birds"?
- 17. What film features Dr. Emilio Lizardo?
- 18. What film's soundtrack featured such pieces of music as "Flight From Peru", "The Basket Game", and "Desert Chase"?

Chameleon can pick up its winner's prize in the mathNEWS mailbox in the MathSoc office. As per usual, mathNEWSquiz submissions are due by 18:30 on Monday, February 26<sup>th</sup>. They can be left in the BLACK BOX or under the mathNEWS (MC3041) office door.

> Lord S'Djawkheril for Mr. Death and dag and The Raving Lunatrek



## **Recycled GridComments**

I've heard that I'm making the Grids too difficult, so I don't feel too badly about doing this... This fortnight's Grid is a repeat of an old fletniowski classic (I hope you don't mind Frank, out there somewhere in gradland). With the extra time for next issue's, maybe I can make one that is a bit easier to do.

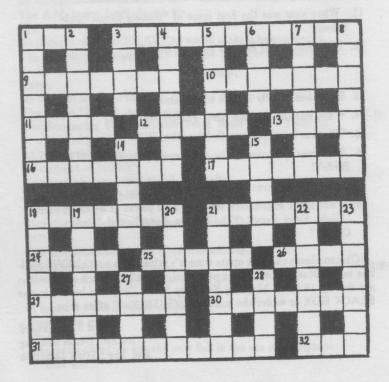
This week's set of solutions bears out that the Grids are a bit on the tough side. There were no solutions (correct or incorrect) submitted for the Conventional. Cryptic solutions were received from: The Return of Captain Chaos; Travelling Salesman; The Mock Chickenloafs; The Avalonians; The Easter Bunny & Lips-You Know It !!; Millenium Falconer; Macgician; Z.B.; Thinkdude. A very strange solution was received from Vistlik the Lampshade, who appears to have FASS on the brain.

Favourite Piezo-electric Effects were: Electron Tunnelling Microscopes; Digital Watches; FASS; Chocolate Frosting Crystals; The way light shines through diamonds; The Leaning Tower of Piezo; Don King's hair; Watching beer foam in an ultrasonic bath.

Comments: I'm back, I'm bad, I'm marking your assignments!; Not going to comment, wouldn't be prudent; I can't wait for Elvis the Series to premiere. (Long live Rambling Silence); Rot not, for in N-space are all manner of things possible; No thanks; Something to do on FASS Tech Weekend; Cut the Bulls\*\*t; I'd like to thank my wife, kids and Roget's Thesaurus; The Romulan is too busy in FASS to do the GridWord. Please see FASS 1990 to make it worth is, and to find out what the lampshade is for.

This Grid's winner is The Avalonians. I'm making some GridCertificates up, so drop by MathSoc and ask about them. I'll write a couple for the first Grid's winners as well. I hope this Grid is slightly more generally accessible. Solutions, as always, are due by 18:30 next production night (Feb. 26th) under the mathNEWS office door, or in the BLACK BOX. Have a good slack week all!

> Lord S'Djawkheril with thanks to fletniowski



# CRYPTIC

- Across 1. The Spanish affirm one hundred. as in the original (3)
- 2. A magician we followed sickly with an atomic being at the start (11)
- 9. An expensive cut for the lord of the lower mid-section (7)
- 10. Ran back with the fee for story-telling (7)
- 11. Aged abnormally, by God! (4)
- 12. The street's current measurement of postage (5)
- 13. Join fifty pigments (4)
- 16. The ship reversed one hundred in near the thing (7)
- 17. Not a note born for the candidate (7)
- 18. A bronze man slopes the curve (7)
- 21. A note to a sibling about cell division (7)
- 24. A star revised painting, et al (4)
- 25. Above average drive all in white (5)
- 26. Canadian aero-firm talks back? (4)
- 29. Fight a trigonometric physical Greek (7)
- 30. Sugar forms a relation around an irregular coast (7)
- 31 Little dancer not quite old enough to be an adolescent (5-6)
- 32. Attempts that rival your lead (3)

Down

- 1. The cusp set for the could-be criminal (7)
- 2. A mongrel raves for the fruit (7)
- 3. A holy representation of one prisoner (4)
- 4. Crazy moon sound of the clock (7)
- 5. A person of fine quartz puts you to sleep (7)
- 6. The hog reacts inwardly to the monster (4)
- 7. That thing took two guys to the European! (7) 8. A sci-fi fan voyages a thousand times, that is (7)
- 14. Rotated range of ire (5)
- 15. Nothing inside will tempt you to hide (5)
- 18. Temperature hurried to position the bus (7)
- 19. Insanely slang for a special fruit container (3-4)
- 20. Decay risen upon the city (7) 21. A "fad" lump right behind the wheel (7)
- 22. Help to dine at the dock (7)
- 23. A cry rose to the witchcraft (7)
- 27. Sojourn of one year in a pig pen (4)
- 28. Mark, direct the speed of light to accelerate right! (4)

Name: Favourite Sword:

Comment:

# CONVENTIONAL

CTOSS	1. ACCOMPLISHMENT
. TURF	
SPELL	2. SPEECH
MYTHOLOGICAL GIANT	3. METAL
0. COAT OF ARMS ANIMAL	4. SEA
CORDURT	5. UNSIDED
1. CORRUPT	6. OPERA SOLO
2. OCEAN INLET	7. ELEMENT TYPE
13. PLAYTHING	8. CONFOUND
16. SUMMER AILMENT	14. SWEET DRINK
17. DONATION	
18. BRITISH AUTHOR	15. TWIST
21. FRENCH MONEY	18. THROW OUT
24. INDICATES	19. MYSTERIOUS
	20. CONSPICUOUS
25. UNSOCIABLE	
26. COWBOY EQUIPMENT	22. STAMP
29. STRADDLING	23. NOBLEMAN'S TERRITORY
30. JOINED	27. IMPERFECT SPEECH
31. BEHEADED	
32. CAP	28. WARM