

Volume 52 Number 1

LookAhead

| mathNEWS |  |
| :---: | :---: |
| Jan 22 | Issue \#2 production night |
| Jan 26 | Issue \#2 hits the stands |
| Feb 5 | Is:rie \#3 production night |
| Feb 9 | Issue \#3 hits the stands |
| Cinema Gratis |  |
| Jan 16 | Tnavailable at press time |
| Jan 23 |  |
| Fw, Flicks |  |
| Jan 12-14 | Working Girl |
| Jan 19-22 | Adventures of Baron Munchausen |
| Jan 26-28 | Batman |
| Co-op Dates |  |
| Jan 15 | Resumeś Due |
| Jan 19 | Want Ads Out |
| Jan 22 | Joh Applications Due |
| Faculty Dates |  |
| Jan 16 | Add course deadline |
| Jan 30 | Drop deadline |

## GRADS OF ${ }^{\mathbf{\prime}} \mathbf{9 0}$ UNITE

## The MGC Wants You!

We hope all the grads had a wonderful holiday and are eager to make this term the best ever. We, the chairwoman and chairman, chairpersons, chairs, have been meeting all week to discuss the merger and/or acquisition of the two streams. By the next issue of mathNEWS the MGC executive will be determined.
Here is a brief description of the upcoming events:

- Quebec Carnival Trip: February 1-4, see Pat for further details.
- Intent to Graduate Form: can be picked up at the Registrar's office and must be completed by March 1.
- MGB: March $17^{\text {th }}$, your involvement is needed.
- Pizza Day: this coming Wednesday; workers needed, check the bulletin board for a sign up sheet.
- Alumni Lane Campaign: donate $\$ 1$ toward a class of ' 90 graduating tree, envelopes available in the MGC office.
- MGC Meeting: Tuesday, February $16^{\text {th }}$, at $2: 30 \mathrm{pm}$.

If you have any questions or concerns feel free to drop by the MGC office. Keep informed of all the MGC happenings by browsing the bulletin board outside the office. Best wishes to everyone in their final term(s).

Kelly Start Emil Mlinarevich MGC Chairs

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mathNEWS is normally a bi-weekly publication funded by and responsible tn, 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 necessarity those of MathSoc or mathNEWS. Send your correspondence to: mathNEWS, MC3041, University of Waterloo, 200 University Ave. W., Waterloo, Ontario, Canada, N 2 L 3 G 1 , or to userid mathnews@watserv1 on USENET.
Editor: David Weil and Paul J. Sahota

## The Last Moments of the Eighties

Hi there boys and girls. My name is Pat and this is (raig ("Yo") and to his left, Dee ("Hey"). We were the MathSoc executive during the Fall of 1989. A lot of neat things happened during the past term that will change all of your lives forever. Let me tell you about them.

An advertising board has been obtained and will be replacing the peg board located between the C\&D and the stairs to the 4 th floor. The advertising board will list events for the upcoming term, will display an ad from one of many corporate sponsors and have a digital display across the top (similar to what you would see in a subway station). Check the messages periodically for last minute reminders, special events, and important dates.

The C\&D has undergone several changes during the past four months. A PC has been purchased to computerised the accounting system. Two new caterers have been contracted, replacing Chef Johannes. Subway and Kitchener Caterers are the new suppliers. Check out the C\&D for an improved variety of sandwiches and homemade soups.

Fall of ' 89 was a socially successful term. Events included a road trip to see the Jays play Baltimore at the Skydome, Oktoberfest at Bingeman Park ( 400 tickets sold in 3 hours), and a GO-KART Lndy held at Erbsville Speedway. Math entered a frosh team in the Engineering SCUNT and finished fourth overall, the highest finish of any frosh team. A semi-formal was held at the University Club where the Council presented former Dean Dr. Jim Kalbfleisch with a gift from the students. An EOT pub was held at the Bombshelter with D.J. (Byrd) from Q107. If you haven't noticed the change in the furniture in the C\&D "comfy lounge", just go in and sit down. You will discover that you no longer sink to the ground. We finally got the furniture fixed!

A proposal for a Mac Lab was made to the MathSoc council along with several recommendations on how to implement this idea. Eventually a network of several Mac computers will be made available to students for word processing and publishing tasks. Unfortunately, MathSoc currently does not have the space to put such a system. During the upcoming summer or fall term, more space will be available to the Math Society. At this time, the implementation of a Mac Lab will become feasible.

Internally, MathSoc has done a little bit of restructuring. Second Vice President positions for activities and services have been created. These positions are appointed by the executive and are available to any Math undergraduate student.

In November, MathSoc held a Grad/Frosh meeting that focused on preparing frosh for the upcoming final exams. Unfortunately, the weather did not cooperate and not as many people as expected showed up.

Math, in conjuction with the Engineering Society, held a forum directed towards the education of highschool guidance councillors on what it takes to succeed in Math and Engineering at the University of Waterloo. Career opportunities in both disciplines were also presented.

Finally, the Federation of Students presented Homecoming "Under the Big Top" last November. A large tent was put up on the village green with events and dancing happening the Thursday, Friday and Saturday nights. MathSoc set up a face painting both on the Friday evening. Homecoming was very successful for the Feds and will hopefully be expanded upon in future years.

Whew, what a term! It was a lot of fun working with everyone. Thank you all for coming out.

Pat Szwyrlo - President F'89 (I wrote this one) Craig Cudmore - V.P. F'89 Dee Vint - Treasurer F'89

## A NEWs Section

There have been recent rumblings from the depths of mathSOC that mathNEWS doesn't have enough news. Do you, the not so loyal reader who never comes out to production nights want some news? For now, unless you give us some reason to discontinue the practice, you will get some news. I have been appointed (saddled with) to the position of News Editor for mathNEWS. I would very much appreciate it if people would deposit ideas for me to cover, or completed articles, under the mathNEWS door. I have also contacted Imp'rint staff about receiving assistance in this endeavour. So, starting next issue, there will actually be news in mathNEWS....Sigh... we'll probably get requests for more math next.

In case you hadn't noticed, the Im,'timt has a new section, a science page. They want you (non-artsies in general) to write for it. So if you get bored with your calculus assignment, drop by the Im,'tint office and ask some questions.
the man with an alternate pseudonym

## CSC Flash!

In which C'alum discovers his navel
Ahem. In important(?) news: CSC elections (which tea and doughnaughts are known to frequent) will be held on January 17 th in a room that is unresolved, but can be linked in by any member of the CSC currently in the office. The time, however, is hardcoded and will not change from 7:00 pm. Nominations are still open, although you must be a member to be elected. You must also be a member to vote. Clearly it is a good thing to be a member. Becoming a member is as easy as dropping by our office and asking any of our user-friendly operators for a new-improved-membership-card-that-now-fits-in-your-wallet. The membership is now only $\$ 2.00$ ! (While supply lasts. Limited time only. Not exactly as shown. Use only as directed. Not to be used while driving. Some ( $680 \times 0$ ) assembly required. Batteries not included. Membership has its privleges.)

Ten years ago today in the C'SC Flash: Upcoming elections where tea and doughnaughts are served were announced, and the location of the upcoming speaker was unknown. (Really! We had a 10 year old hardcopy in our archives!)

Glancing up at the official CSC Whiteboard ${ }^{(t i u)}$ reveals that Mike Donat from Microsoft Corporation will be speaking somewhere on canpus January 24th. More information will be given in the next issue of the Flash (shortly after the event...) You could also check uw.csc or hardcopy posters strategically placed around the campus.

Calum
P.S. We lied, Calum has no navel. ..

8

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## Prof Quotes

The best of last term!

A new term, a new year and a new decade are upon us and for those of you who were not here last term here are the best Prof quotes of last term according to the Pollster and the Greypilgrim

The best Prof Quotes from the past five years in the bestselling book: The Best of Prof Quotes available in the MathSoc office.

Submit those Prof Quotes into the mathNEWS BLACK BOX on the third floor of the MC.
"Sequences and series aren't that tough. All you need is a bottle of scotch and an hour."

Ponzo, Math 137
"What's the definition of a computer? An accountant with a personality."

Gosselink, Engl 410A
"Having the intellect of a retarded squirrel or knowing what a freshman knows aren't much different."

Davis, Math 234A
"Increasing functions look like decreasing functions if you stand on your head."

Ponzo, Math 147
"Zero is about halfway between $-\infty$ and $+\infty$."
Frank Zorzitto, Math 147
"If you use a trick twice, it's a method!"
Frank Zorzitto, Math 147
"What's a simple 4-letter word with no repeating letters?"
Cherry, Stat 220
"That's an awful solution! Do you do your work terms for IBM? ...I didn't say that."

Beatty, CS 354
"Don'tcha know this letter, $v$, it's sort of like a hung over $\mathbf{v}$."
S. Meester, Stat 231
"More equations than an engineer has brain cells - at least two."
K. Salston, Math 230A
"By inspection; that's a nice phrase. A bit different than the mathematical 'obvious', but it hides a lot of things."
D. Hemming, Phys 252

## 4 mathNEWS January 12, 1990

## A Tale of Two Photons

Vietzsche Meets Neuton

Once upon a time, there lived two little photons, named Sally and Arnold. They lived in a beautiful forest in a lovely valley surrounded by all the wonders that mother nature had to offer: babbling brooks, trees swaying in the gentle breeze, squirrels hopping along the branches, birds singing overhead, rabbits nibbling the grass, and deer gamboling in the meadows.

They were good little photons. They always kept their incident and reflected angles equal, and they always obeyed Snell's law whenever they went refracting. They played fun games all day, and they were the best of friends.

Sally would find a patch of fresh sparkling diamond and exclaim: "Look, Arnold! A medium with a refractive index of 2.4173 ! Let's dive in!" And Arnold would say "Hooray!", and they would refract and reflect to their heart's content, at angles not possible with the more common air-water interface.

Arnold would find an unscratched tetrahedral prism, perfectly equilateral, and exclaim: "Look Sally! Fourfold three-dimensional symmetry! Multiple internal reflections! Let's go!" And Sally would say "Hooray!", and they would internally reflect until finally their incident path became normal to the surface and they would exit without feeling a thing.

One day, they were playing in the babbling brook, just about to leave the water, when disaster struck. The angle between Sally's incident path and the normal was less than the critical angle, but Arnold's was not! Sally would refract out of the water, but Arnold would internally reflect! Their paths would be different: they would be parted! They might never see each other again! What were they to do?

Overcome with agony and despair, they cried out to the heavens for mercy: "Oh, will somebody please help us?"
But God saw their distress, and heard their plea. God saw that they had been good little photons all their lives, keeping their angles of incidence and reflection equal, and always obeying Snell's Law whenever they refracted. God saw their plight, and felt sadness.
So God came to them and said: "Sally. Arnold. You have been good little photons all your lives. You have always kept your incident and reflected angles equal. You have always obeyed Snell's Law whenever you crossed the interface between two dissimilar media. You have been happy and content, and at peace with the world around you. I think we can bend the rules just this once. Arnold, I think we can adjust this sine thingamajig so that you too can refract out of the water and remain with Sally."

Just then came a blinding flash of light. A discontinuity was formed, and space became multiply connected. Out of the undefinable, emerged a figure. The figure spoke with a voice older then age itself, a voice that spoke of power undreamt of by mere immortal deities. It was the voice of MatheMatics.
"Thy Sine Function Shalt Never Be Greater Than One."
God, however, failed to comprehend the extent of the power of MatheMatics. "Listen you arithmetical ignoramus, I am Divine. I am the Creator of the Cosmos. I am the Ruler of the Universe. I will do whatever I want with your silly siney-winey function."
"Now Arnold, let's just adjust this thing to start with."
Softly, quietly, MatheMatics spoke: "Listen..."
"Go away. I'm busy."
"I Know Of A Variable..."
"Shut up."
"It Is Called $x \ldots$.
"Just rearrange this nonsense..."
"You Do Not Vary With $x \ldots$...
"Almost done now, Arnold!"
"With Respect To $x$, You Are A Constant."
And MatheMatics summoned up the Powers. And MatheMatics gathered up the blinding elegance of the Intrinsic Identities. And Math-
eMatics unleashed the eternal might of the Calculus. And Mathe:Matics bore down a Gaze upon the Divine figure. And MatheMatics Differentiated with respect to $x$.

Too late, God saw the Power of the Calculus that MatheMatics was wielding. Eternal agony wrenched the Divine Being under the unflinching Gaze. The creator of the cosmos watched helplessly as $\delta x$ approached zero, and saw that $\operatorname{god}(x)$ was indeed a Constant. The Ruler of the Universe felt the Fundamental Power of the Calculus as the divine soul was rent into Lufinitesimals. In the Sacred Being's final instant of existence, the Holy Spirit knew the value of the Divine Derivative, and it was identically Zero for all $x$.
"Thy Sine Function Shalt Never Be Greater Than One."
Now MatheMatics turned the Gaze upon Sally and Arnold, the two good little photons. The two little photons who always kept their incident and reflected angles equal. The good little photons who always obeyed Snell's Law whenever they refracted.
"Do You Wish Thy Sine Function To Be Greater Than One?"
"N-no S-s-sir," shivered Sally and Arnold, realizing their relative importance in the grand scheme of things.
"Then All is Good."
So Mathematics gathered the Powers, and returned to the place where division by zero is well defined, to the other side of the infinite. And the singularity folded in upon itself, and space resumed its previous topology.

All was quiet.
Once more Sally and Arnold were alone in the babbling brook. Trees swayed in the gentle breeze, and squirrels hopped along the branches. Birds were singing overhead. Rabbits nibbled the grass, and deer were gamboling in the meadows.
"Oh look, Arnold!" exclaimed Sally, "An air bubble! You'll be deflected before you encounter the interface! Your angle of incidence will be less than the critical angle after all!"
"Oh joy!" cried Arnold, "I'll refract out with you! I guess we didn't need to bother that God fellow. Sorry about that, God!"

So they went off to play in a sparkling diamond tetrahedral prism, and lived happily ever after.

This document is the second in a series produced and authorized by the Cubic Earth Society (CES). The first, "Energy", has already become a collector's item. So get yours now, before it's too late! All reproduction of this document is strictly encouraged! Or, if you prefer, send two (2) box-tops somewhere and maybe something useful will happen. A third alternative is to simply send us a large sum of money and we'll forget the entire incident.

Any attempt to deface this document will result in sever retributions, to wit: offenders will be brutally seized by 2.56 metre high 315 kilogram mindless gorilla-slaves, mercilessly lined up against a wall, and without pity, these ruthless gorilla-slaves will give the helpless fool one (1) candy cane. (Note: this offer contingent on the availability of 2.56 metre high 315 kilogram mindless gorilla-slaves.)

Thank you, and in the name of the Eight Holy Corners, have a nice day.

CES headquarters

# Question of the Decade 

Q: Where do Teenage Mutant Ninja Turtles come from?
A: Teenage Mutant Ninja Stocks!

## Priority Statement

This just in from the mathNEWS Leaks \& Rumours Dept. - the Office of the Dean is set to release a statement addressing "CW's goals for the '90s". This forward-looking document details how your tuition will be spent in the coming decade to "improve the quality of education" and "reinforce LW's reputation as a World Class center of high-tech research and imnovation".

Among the more prominently stated goals were:

- Better coffee in the profs' lounges
- Conversion of library space into "Industry Reception areas"
- Topological survey \& mapping of the sixth floor of the MC
- Faculty exchange programs to underdeveloped universities in the Azores, Bahamas and Hawaii
- Creation of a chair of "Industrial Co-Development, technologytransfer and General Toadying" (Slogan: "UW: Brains for Bucks")
- More girls in Math

When asked how the above goals would enhance the quality of education, the Dean's Office is said to have replied, "Well, ya' know."

Kermite the Mathematical Frog

## Don't Let The Sun Go Down On Me



## I can't vi

'More' is gone from orchid
All my output
Seems to fade to monochrome
I'm growing tired
And orchid dies before me
Frozen here
On the semaphore of life
Too late to save my files from failing
I took a chance
And you logged on to my wyse
But you misread
My source code when I wrote it
Closed the file
and crunched it to a byte
Don't let the SUN go down on me Don't let the SUN
Although I search the disk there's always zero blocks free
It just allows a fragment of the files I write in C
By losing everything, it's like the SUN going down on me.
(And Lakehead)

## The Audborn Field Guide to common UW courses

As a public service to those starting the new term barely awake, or to those who haven't quite made it to a coherent class yet, mathNEWS presents a list of common math undergrad courses and their distinguishing characteristics.

Math 137 My Big Little Calculus Course, Math 137 does a lot of stuff you saw first somewhere between kindergarten and Grade 13 (?). It is often recognized by its tendency to let a lot of stuff approach zero, without going far enough. Offered this term because some people liked it so much the first time.

Math 138 The continuation of the above, this course comes dangerously close to covering the occassional bit of serious calculus. As a result, it is often interrupted by vigorous flapping as arms are waved and proofs expressed as opinions.

Math 135 Algebra. Ten million and one ways of writing zero, all incomprehensible. 135 spends most of its time writing zero as a result of operating on the field of integers.

Math 136 I can't remember what happened in 136, to tell the truth. It wasn't very exciting.

Math 230A Everything you didn't understand in 138 comes back in 3-D (like Jaws). 230A is noted for going in several directions at once, resulting in a net displacement of zero. (Don't let this fool you into thinking you'll pass the final exam, though.)
Math 230B All the King's Horses and all the King's Men couldn't put the mess of 230 A back together again, but 230 B will try. In it you will learn several new and exciting ways to integrate. Take a good look, because $90 \%$ of it you'll never see again (unless you go into AM, heh heh heh...)

C\&O 230 you are doomed
Stat 230/231 yes, I'm rushing to finish this article
Mthel 100 flap, flap, flap

Kermit:

The Stanley Burger Philosophy


At Stanley's we believe that each eustomer deserven agreal tasting. miolesome meal. Every item on our mena is prepared the olde-fashioned way msing only fresh, nutritious ins rediente. Our burgers are made with $100 \%$ pure beef. all-natural apices, no added prevervatives and are served on bakery fresh buns. We take pride in putting only the best into everything we make.

Experience the Difference of a Fresh Home Made Burger 210 King SL. N. Weterloo ucose mom mu anmen one coveon mon motis.

STANLEY COMBO

Stanley Burger Fries Pop
Only \$ $3 .{ }^{29}$


Expires Jan. 26, 1990

## School of Digital Relationships

Leurn the ins and outs of computer dating
Our new techuiques have been hand-tested by many satisfied customers: over two billion servers served.
C'ourses include material on the following key topics:
Lesson 1 Interfacing techniques, user friendliness
Lesson 2 Greetings: the hand-shake
Lesson 3 KERMITing
Lesson 4 Concurrent resource sharing (*)
Lesson 5 Emptying buffers and spawning child processes (*)
Lesson 6 Termination and shut-down
(*) advanced topics: (for experienced users only)
Just listen to these delighted customers:
". . . and I always thought computers were just for number crunching. I didn't realize they could crunch THAT!"
"Bob"
"Before I met '286 here, my life was meaningless. But now, I have the most eclectic relationship of anyone I know! Thanks, Digital Relationships!"
"Mary"
"This is the most disgusting, vile, and wholeheartedly evil concept ever brought to the light of day. The very notion fills my mind with thoughts of hatred and revulsion. I pray, Lord, that these sinners see the light and realize the evil of their ways, and then of course perish in the eternal flames of hell."
president Bush
"... oh... my god !!!. ..
"hunh?"
George
ex-president Bonzo
Send cheque, money order, or gold bullion to:
DIGITAL RELATIONSHIPS
box 1234
Washington, DC
"Digital has it now (tm)"
Caroline Duck CES headquarters

## Proof of the Week

Construct a general triangle.
Construct the bisector of -BAC .
Construct the right bisector of BC .
Label points D and E as in Diagram 1.
Construct BD and DC.
Construct the perpendicular from D to AB .
Construct the perpendicular from D to AC .
Label points F and G as in Diagram 2.
Now $\mathrm{BE}=\mathrm{EC}$ by construction.
Hence $\triangle \mathrm{BED} \equiv \angle \mathrm{CED}$.
So $\mathrm{BD}=\mathrm{DC}$.
Also $\angle \mathrm{FAD}=\angle \mathrm{GAD}$ by construction.
Thus $-\mathrm{GDA}=\angle \mathrm{FDA}$.
But $A D$ is commion to $\triangle F A D$ and $\angle G A D$.
Hence $\triangle \mathrm{FAD} \equiv \triangle \mathrm{GAD}$.
It follows that $\mathrm{FD}=\mathrm{DG}$ and $\mathrm{FA}=\mathrm{GA}$.
Consider $\triangle \mathrm{FDB}$ and $\triangle \mathrm{GDC}$.
We have established that $\mathrm{FD}=\mathrm{DG}$ and $\mathrm{BD}=\mathrm{DC}$.
Also, by construction, $\mathrm{FD} \perp \mathrm{AB}$ and $\mathrm{DG} \perp \mathrm{AC}$.
Thus $\mathrm{FB}=\mathrm{GC}$, by Pythagorean Theorem.
Then $F B+F A=G C+G A$.
That is, $A B=A C$.
Therefore $\triangle \mathrm{ABC}$ is isoceles.
But this construction may also be carried out at $\angle \mathrm{ABC}$.
So, by a similar proof, $\mathrm{AB}=\mathrm{BC}$.
Hence $\mathrm{AB}=\mathrm{BC}=\mathrm{CA}$.
Thus $\triangle A B C$ is equilateral.
Therefore all triangles are equilateral.
Q.E.D.



## New Tax Announced

The government recently announced a new optional tax. The G.S.T. (Good Samaritans Tax) will optionally take $83 \%$ of your gross income out of your pocket and into the F.M.P.F. (Finance Ministers Personal Fund). Fortunately there is an option. You can opt to pay $97 \%$ of your income to the P.M.F.P. (Prime Ministers Personal Fund).

The announcement of this tax has caused much consternation among the public, and has prompted the formation of W.A.R.T. (Waterloo Atheist Reformed Terrorist Society). Says the leader of this group "This tax can only be inspired by the Evil Satanic Communist Artsie Rebels..." The leader of the E.S.C.A.R. had no comment. What will you do about this new tax?
the man without an alternate pseudonym


## VapidFire

My mind was sabotaged by Martiuns, claims Noriega.
Panama (VP)-Shortly after his surrender to the United States Army, Panamanian ex-strongman Manuel X. Noriega made a statement to the press. Representatives from the Star, the Weekly World News and other leading journals (including yours truly) were on hand to hear Noriega tell of his hair-raising ordeal at the hands of Martian hypnotists. "It wasn't just me," Noriega stated. Among others that he claims were brainwashed by the little pink men were Ronald Q. Reagan, Margaret Z. Thatcher and Nicolae P. Ceausescu.

- The general manager of the Toronto Maple Leafs, Harold Ballard, failed to fall ill this week. His press manager, F. Rod, said he was at the hospital, where Ballard's personal physician had to be treated for severe shock following his failure to receive a telephone call at 7:30 on Tuesday evening.
- Following the lead of his artist friend on the west coast, Waterloo modern artist Hugh Moross was swarmed by animal rights activists when he attempted to drop a steamroller on Buffy, the peregrine falcon, from the top of the Arts Library.
- Contact was lost with the space shuttle, Columbia, shortly after its retrieval of the LDEF satellite. According to Houston, they re-established contact several hours later, when a mechanic discovered someone had dropped an Oh! Henry bar into the main communications relay. The next shuttle mission is a top-secret Department of Defense flight by the shuttle Atlantis, and in expectation of the flight, Testor Toys has released a model kit revealing the details of the satellites to be launched and other related data.

Mr. Death Falconer


Your Friday morning friend, PRESENTS

## "Just think of me as the mathematical Picasso"

The Best of mathNEWS Prof Quotes


Contains a selection of almost 300 quotes from mathNEWS Fall 1985 through
Summer 1988.
"The book is... better. . . than . . cheap draft beer." (Imprint review)
WHEN Now.
WHERE? MathSoc, MC3038.
COST a mere $\$ 4.00 \mathrm{Cdn}$.

## Noriega Responsible For PC Virus

Operation Just 'Cause has produced yet another surprising revelation this week.

During the Americans' invasion of Panama, the United States Marines stumbled upon documents naming Manuel Noriega as the Chief Executive Officer of PC' C'yborg Corporation, the company in Panama which produced the PC virus that made headlines earlier this month. Also seized in the raid were a file folder containing correspondence between Noriega and Microsoft CEO Bill Gates, five diskettes containing the virus program and a pirated copy of Leisure Suit Larry, and a half-empty tube of dermatological medication.

Judge Eugene Q. Reinhold entered a plea of not guilty on Mr. Noriega's behalf when his lawyer protested that the trial was illegal, since his client's arrest and the U.S.'s invasion of Panama was illegal. Judge Reinhold responded that Mr. Noriega should have thought of that before he started pirating computer games, and that, in short, Noriega was just being a big suck about the whole thing.

Mr . Gates could not be reached for comment.
Johnny Mathless

## Top 10 reasons to come back to University of Waterloo

10. You LOVE homework.
11. The rock museum.
12. We have our own Eatons Centre.
13. The football team.
14. Wednesday at the BombShelter.
15. For vivacious, vixen, voluptous, vegetarian, verrocose women.
16. Ice fishing for ducks from a windsurfer on the Columbia Lake using engineers as bait.
$\dot{3}$. George did!
17. Ducks.
18. To read mathNEWS

George (not her real name)

## MathSOC to Secede from UW

Yesterday, the Premier of the Math Society, Tom Vandeloo, announced that the society is declaring a sovereignty association with the rest of LW W. The first act of the new sovereign organisation was to pass bylaw 178 , to restrict language use. Henceforth, all printed matter will only use numbers and Greek letters. The law provides severe fines for offenders. (transfer to engineering) In addition to printed matter, use of non-math terminology in speech is to be discouraged. To allay the fears of concerned engineers, Premier Vandeloo assured the UW community in a statement today that the C'S EEE students will be treated precisely as they deserve. The I'W Board of Governors made a strong statement about university minty, and the soul of university students everywhere.
elmer
the man without a pseudonym george (not her real name)

## Ultra Classifieds

George where are you?

George
Dear Diary:
Today I will tell you a wonderful secret about Shaun Cassidy

## FYI

Project Butterfly- 79 will commence in 3 days.
Be ready

Warning: in conjunction with the Underwater Basketweaving Society, the Underwater Edible Underwear Revivalist Association is infiltrating U.W.

Ducks LTD.
Mathies: Are you lusting after wrenches? Maybe you are really an engineer at heart. Come out of the closet. WRENCH meeting E1 6969, midnight Jan 13, 1989 (bring your own).
What is the scourge of mankind, more immoral than pornography, the cause of more heartbreak than foot ${ }^{1}$. Ill? Come to a meeting of the Mathis Against WRENCHES.
Today in DC 3141
Topic tonight: How to find the acorn you buried last fall. Squirrels meeting at the old oak Tree, village green. Nuts and beer provided.

## QUEBEC WINTER CARNIVAL



- Return Transportation via Motor coach
- 2 Nights accomudation in Gid Quebec City
- Contact Mirth Sac (MC 30.38) Fix detail.


## mathNEWSquiz \#1

## Not the Frilay morning . Veus:

., Wolverhampton nil. In other news today, the comedy tabloid mathNEWS, for the first time ever, is attempting a new format for its world famous Quiz page, which is expected to result in the execution of the two new mathNEWS quizmasters. For those of you who have not yet received your copy, the questions for the first issue are:

## Science Fiction

1. Who was THE editor of Astounding?
2. Who has written the most science fiction novels?
3. Who coined the term "robot" and in what work?
4. Who invented the communications satellite?
5. How many people were injured because of the 1938 radio broadcast of War of the Worlds?
6. Who created Valentine Michael Smith?

## Religion

7. Who is the head of the Church of England?
8. What is the name of the prophet of Sikhism?
9. What book begins, "The Tao which can be named is not the true Tao"?
10. How many people were burned at the stake in Salem, Massachusetts, for practicing witcheraft?
11. Which god was the most commonly worshipped in the Roman legions?
12. Who founded the Church of Christian Science?

## Computers

13. Who wrote C News and Patch?
14. Name the first three American digital computers.
15. After which operating system was UNIX named?
16. In what year was the IBM Personal Computer released?
17. What does NCR stand for?
18. What is the bottom of BASIC memory on a C64?

The answers are due, as per usual, in the BLACK BOX or under the mathNEWS office door in MC3041 by 18:00 January 22. And now the weather. There is a large Arctic air mass sweeping down the east coast of Norway...

## Math International

## Or Whut Will They Differentiute. Vext?

Joseph is in an ellipse of eccentricity 1.23469 in the upper left hand corner of the screen, overlaying a cutesy half-animated graphics raster scan image.

Hello and welcome to Math International.
This scene is of a moving queue structure in Japan that can travel at 200 nodes per mimute. Researchers say this queue will replace the current transient system in about 10 microseconds. The queue works by foating on a layer of superheated cream of Bernoulli soup.

Joseph's head disuppears revealing a cutesy bird.
It is impossible to sneeze while keeping your solution sets open.
A nod is as good as a wink to a blind bat.
(commercial break)
Joseph is in a neu ellipse, top right corner of screen this time.
Two mathematicians at the Center for Eccentricity in Brussels have the perfect way to solve the Travelling Wilbury problem. It seems that if you replace all edges by points, you can get an equivalent graph, which counterpoints the surrealism of the metaphorical album cover to the hidden names of the singers.

My big toe is 2.5223469 cm long.
Colourless green ideas sleep furiously.
(commercial break)

> Joseph is in an aquarium.

And finally, one last word. Have you ever had to solve a partial differential equation at the Grocery Store? Well, thanks to the ingenious efforts of two researchers at Stark Naked University in Omaha, you can now have your problem solved for you while you wait. The idea is
to use the cash registers as bait to lure mathematicians into the store and offer them rewards for solving the problem. The two researchers invented this solution over a large broccoli while waiting for a mathematician friend. Now you won't have to buy spiffy juice to solve your Diff EQ's. (snort snort) God, I'm funny!

## What will they differentiate next?

Until next time, I'm Joseph Campumbrella, and Tea O'Leek, for Math International.

Deepthot
S\&\&M
Maverick

## Masthead

The first production night has turned out to be pretty chaoti. Thanks to all the great people who showed up to help out. These most amazing people include: Roger Pantos, Takashi Toyooka, Becky Riedl, Michele Benaud, Minoslaw Kuc, Frederick Verwijs 'Eric', Glen Reesor, Stephan Mueller, Edwin Hoogerbeets, Darren Brocklehurst, Doug Hopkins, David Nuttall, Mike Buckley, Penny Watt, David Gibbs, Trevor Green, Carolyn Duke, Dan Astoorian, Mike Newman, Kivi Shapiro, David Fenger, George and our most excellent treasurer and former editor Steve Smith.

Thanks to Marion and Graphic Services. We're not going to thank the pizza place anymore, because they don't do anything to deserve it.

David Weil
and
Paul Sahota

## Brainfried GridComments

Welcome back to all those who were here last term, hello to those returning from the summer. I am, sort of, your GridMaster (I hope). Trouble is, I'm also editing this semester. It's $23: 20$ right now, I have to complete this, read and correct articles and hopefully, keep everybody else on track. I suppose I'm not being fair to Paul, but as the only person here who knows Latex, I'm a bit harried.

I was plamning to write a short explanation of my style of gridwords, but I don't have time, so you'll have to figure it out on your own. Thanks to Penny, Mike and Miroslaw who helped me get this together (as much as it is). This semester already looks busy, so there may be some guest GridMasters. Be prepared for almost anything.

I was frustrated last semester because the editor never did get out to buy GridPrizes, and there still aren't any. I'd like to get some but it's not a high-priority item, so don't hold your breath.

Solutions may be submitted in the BLACK BOX (MC $3^{5 . l}$ floor, across from the comfy lounge) or put under the door of the mathNEWS office ( MC 3041 ). Next production night (the $22^{\text {th }}$ ), two winners will be drawn from the set of correct solutions for the cryptic and conventional Grids. Everyone who submits a solution will get to have their nym (or pseudonym) in mathNEWS. A solution for this fortnight's GridWord will appear in the next issue of mathNEWS along with a brand new Grid.

Lord S'Djawkheril

## Conventional




## Cryptic

## Across

1. Object, craft one datum ( 8 )
2. Principle vault (4)
3. The running bird is in the friar's bone (5)
4. Honest because the Queen's back ( 7 )
5. Plate in a numeral workplace $(2,4)$
6. Dine around a ship's boat ( 6 )
7. A new antelope (3)
8. Mittens or a bandage (6)
9. Swindle an alien, throat (6)
10. I see (3)
11. Vulgar state, hairless (6)
12. A heron chomped a seabird ( 7 )
13. Turbine powered body odour after the back furrow (5)
14. Wound the unbegun luck token (4)
15. Alienate an established codomain (8)

## Down

1. Insult the Air Force facade (7)
2. Motes dance by the books (5)
3. Premier evergreen street (5)
4. Price the function's time (4)
5. Currently carbon are you? League expansion (7)
6. Seer after a hundred in a hide boat (7)
7. The bird beheaded sorrow (5)
8. Toboggan, right the German gun (5)
9. Pornography, a period in Beethoven's "Heroic" symphony (7)
10. Holy place alternates so aunt cut guam (7)
11. The frog's young's tutor, fifty flagstaff (7)
12. Bury in terra firma (5)
13. Maid's garment month, province (5)
14. The burden is upon ourselves (4)
