


mathNEWS

Volume 43 Number 6

Friday, March 27th, 1987

A Cut (AND PASTE) Above The Rest

University of Waterloo 

GAZEBO

The Student Newspaper, University of Waterloo

Armpit

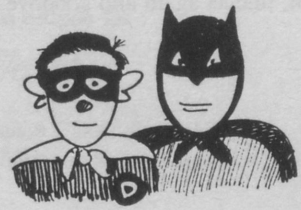


IRON MAIDEN

The Engineering Society's Student forum



IN THIS ISSUE OF (YOUR FRIEND) mathNEWS
 THE DASTARDLY DESTRUCTION OF THE
 DYNAMIC DUO . . . GRIDWORD . . . SQUIZ . . .



LookAhead

Cinema Gratis	
April 1	The Wall (Pink Floyd) & Gimme Shelter
April 8	Beverly Hills Cop & Railrodder
April 15	Indiana Jones & Women at Work Thanks Cinema Gratis for a great term!
Fed Flicks	
Mar 27-29	Little Shop of Horrors <i>That's All Folks!!</i>
UW Arts Centre	
Mar 27	UW Band concert
Mar 28	UW Choral concert
Mar 28	Aesop's and other fables
Mar 29	Bojangles Showcase '87
Mar 31	Alberta Ballet Company
Apr 2-4	Pump Boys and Dinettes
Apr 8-11	The Pirates of Penzance
Apr 11	Variety Night for Lennox Lewis
Apr 14-16	The Importance of being Ernest
Apr 23-24	KW Kiwanis Festival
Apr 24	Fantastic East Africa
Apr 25-26	Steppin' out '87
Apr 30	Accent on Percussion
DCS Courses	
Mar 30,31, Apr 2	Int. DISSPLA
Mar 30,31, Apr 2	Int. VMS
Apr 6,8	Int. DOS
Apr 7,9	SUN Overview
Apr 7,9,10	Spires Part I
Apr 13,15	Advanced DOS
Apr 14	Gremlin (Bright light! Bright light!)
Apr 20,22,24	Int. LaTeX
Apr 21,23	Int. ZIM and/or Int. WORD
Apr 27	PC Software Demos
Apr 29,30	Advanced WORD
MathSoc	
Apr 1	EOT PUB !! (King of Carnival, etc ...)
Math Faculty	
April 1	Last Day of Lectures (Fittingly enough)
April 3	ELPE
April 4-24	Exams
mathNEWS	
NOW	Summer '87 Subscriptions available in MathSoc

A Word From The Editor

You hold in your hands the last mathNEWS of the term. I hope you have enjoyed mathNEWS this term; we have tried to be a little more innovative and, as usual, to have fun. I would like to thank everyone who made any sort of contribution at any time this term. Special thanks to the staff who often don't get the credit they deserve.

Look forward to a new mathNEWS in the summer. Those of you leaving town may want to subscribe to mathNEWS - it'll be worth it.

Well, thanks again and goodbye all.

dan schnabel

Prezz Sezz

Happy Spring!! It is very unfortunate that associated with the seasonal improvement in atmospheric conditions is the ever-dreaded and fast approaching period of depression and bad tempers known as final exams.

But not to worry. MathSoc as usual has something planned to help you shake those pre-final blahs.

April 1 at Fed Hall in association with (yes the rumours are true!) EngSoc, MathSoc presents the EOT Last Chance to be Foolish Pub! Included in this gala event is the ever popular Karnival King Competition. What exactly is a Karnival King? Let's just say guys who get urges to shop at Suzy Shier would probably be leading candidates to win this show! In other words, A Guy's Beauty Pageant in Drag! It promises to be a great time so don't miss out!

Seeing as this is the last mathNEWS for the term I'd like to say thanks to all those graduating students. Some of you I have known since the time I started at UW and since then have become very valued and trusted. I will miss you a great deal. At the same time, I wish each and everyone of you the very best of luck in your new careers and hope that you'll be back in November for Homecoming '87.

Speaking of grads, a special word of thanks to Shelly, Brenda and Ilia for planning a great Grad Ball. All the hard work and long hours spent were really worthwhile. Thanks also to all those who helped in any way. Special congrats to Brian Fortune, this year's recipient of the J. Alan George Award!

I hope everyone has a healthy and happy summer and I'll see you again in the fall.

Dave

Prof Quotes

Here's a few more prof quotes to take you into your workterm.

"All my Chinese students love orientations ... you didn't laugh ... I'd better consult my Chinese Joke Advisor."

Honsberger, C&O 230

"Close the door. It's driving me mad. Lots of things drive me mad."

J. Wainwright, Math 140B

"It's hard to get good students. I think I'll go back to my office and read my job description."

M.J. Best, C&O 350

"A pole of order one is called a simple pole. This is not a racial statement."

J. Baker, Math 332b

"I was using double, single subscripts, but you can use single double subscripts if you want."

B. Char, CS 487

"Time goes on for a long while."

Dr. Hui, AM 478

"Instead of s I'm writing z to get us in the mood for complex integration."

D. Siegel, AM 481B

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Editor: dan schnabel

MathSoc Office

With finals quickly approaching, you will want to start early with the photocopying of past finals. The MathSoc office now has 2 photocopiers and lots of old finals. Remember we are open from 8:30 each morning to 4:30 at night most days. During finals the office will be open on Monday, Wednesday and Friday from 8:30-11:30 up until April 10 and then it should open again around May 5.

Good Luck with finals!

Garth, Office Manager

Yearbook Distribution

The Yearbooks will be distributed at Convocation on 30th May, probably when you return your gown. Your receipt will only be necessary if our backup lists don't record your purchase, so be on the safe side.

BUT...if you will not be at convocation and purchased a yearbook, you can have it mailed out in May. Watch out for posters about sign-up in the next week. It will probably be \$4 in Canada, \$5 overseas.

If you miss both of these, you'll have to pick them up from MathSoc after the end of May.

For those who were wondering, there won't be any Math Grad Ball pictures in the Yearbook (the yearbooks wouldn't have been ready by May). Sorry.

Congratulations to all graduates. Good luck on exams, and we'll see you at the end of May.

-BP

Free! Free at Last!

The worst moment in my life occurred (it seems eons ago) when Needless Hell threw the book at me: The University of Waterloo Undergraduate Calendar. It was then I realized I had to serve a five year sentence as an undergraduate student or choose the four year hard labour option. Being eighteen at the time, five years might as well have been a lifetime. I chose the four-years-in-hell plan. If I could go back four years I think I'd kill myself.

But now it's over. I practice saying this every night, *O-VER*. I've been running a count-down for a couple years now. It's so difficult to say "five hundred and eighty-four days"; but "twelve days" rolls off the tongue like a wave to the shore.

So you're thinking: "He can't be all that happy. After all, exams are still coming up, and fourth year exams are tough, and, and, and, IT'S NOT FAIR!". That's right! It's not fair. Fourth year exams are easy. Face it, only a professor who's a real asshole would burn a graduating student on his last exam; those professors teach the lower years. But there's more! When you're fourth year, even if you get all fifties for your final grades, your average won't slip more than 3 or 4 percent! Fourth year students will soon get jobs that pay *real* money. Of course the students may choose to go to Graduate School, but even then the University pays *you* to study there. So, when it comes to exam stress, the question that every fourth-year student repeats with a satisfying grin is, *WHO CARES?*

The best part to graduating has to be watching people who aren't. I can't walk down a single hallway without falling into fits of laughter when I look at someone proudly displaying a Waterloo jacket with a "91" on the sleeve. A "91" for God's sake! They'll *never* get out of here! Now I know why fourth year students laughed at me in the past. I thought it was because they liked me.

So now that I'm taking off to the REAL WORLD, I suppose I should say something like I'll miss the university ...

Bruce (I'm so wasted) Sutherland

More Info Needed on Student Reports

You may not be aware of this, but the "Student Examination Reports" (i.e. the "unofficial" transcripts sent to each student at the end of every term) vary from faculty to faculty. The math reports, as you probably know contain just the course number and mark received, but no information on the course content.

The math report is short and concise, however to anyone not with the University of Waterloo or anyone who does not have a UW calendar handy, the report contains a lot of meaningless information. For example, what is C&O 230, or Math 134B, or CS 354?

Over the last two weeks, I have suggested to certain members of the Math faculty, that our examination reports be modified to include at least the course names (i.e. CS 354—Operating Systems). With this addition, the specific subject matter of each course would be indicated, increasing the usefulness of the report. The request for such a change is in no way outrageous since this format is already used for "official" transcripts. The engineering examination reports (which have a much more elaborate format than ours) do include the full course name.

So, why has the faculty kept the current report? The faculty's arguments consist basically of two points: 1) the cost and 2) their opinion that the report is designed to be an internal document. The first point doesn't bear much weight; after all, what's a few extra sheets of paper? The second point would be valid if the document was indeed "internal" (i.e. then a short format is desirable). From the faculty's viewpoint, the report may be considered internal, but surely most students do not feel that way. Often, the report is used when applying for scholarships or jobs. More significantly, Co-ordination and Placement sends these reports to all our co-op employers. Remember, many of these employers also receive the engineering reports. I wonder which ones are more meaningful to them?

With the hope that the faculty will appreciate my point and consider the modification to the report, I am pursuing the matter further. MathSoc council has given me their support, and I would appreciate your suggestions or comments (via mathNEWS or MathSoc office) concerning the examination reports or the official transcripts.

Kapil Lohia

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THE ADVENTURES OF WATMAN



Last issue we ... uh ... well ... dynamic duo ... uh ... drugs Well, nobody seems to know what to make of last issue.

"Holy Bobby Ewing reincarnations Watman," Duck exclaimed as he typically does, "What happened? Thousands of profs, red tape, Myron Baloney - I don't know what to make of last issue?"

"You were dreaming Duck. Needles Wainwright (the current villain) has been filling this room with marijuana smoke. I, unlike you, thought to make raisin bran a part of my well balanced breakfast and consequently remained unaneffected."

"I don't do stinking raisins."

"Never mind about that now Duck, just listen."

A hissing sound found its way to Duck's ear drums where earlier there had been raisin bran. The smoke was thinning, escaping from the room through a gap in the plot. With their vision restored they found themselves in a small room filled with books.

"Holy Dana Porter Watman, there must be hundreds of books in here."

"I count 401 Duck. Do you know what this means?"

"We're in a bookmobile travelling down the 401 to Toronto."

"Exactly! And Needles, who is just behind that door, is driving and he is going to have us both archived to where we can no longer fight crime and chat up the girls at Scoops"

Then, with their strength regained, they easily broke the chains bonding them to a copy of *Physics* by Halliday and Resnick. Seconds later the aforementioned door was ripped from its hinges and a startled villain dragged from his seat.

BIFF!

THWART!

KLUNK!

Alone and taken by surprise Needles Wainwright was easily constrained.

"You'll never win Watman!," he yelled, "You'll all be placed! I'll show you!"

Watman and Duck took control of the bookmobile with the villain safely stowed in the back.

"His threat was disturbing Duck. We'll all be placed? Hmm...."

"That reminds me Watman. Coordination and Placement found a job for me. I'll be working in Toronto this summer. As long as we're half way there, can we take the rest of the afternoon off to look for a place to live?"

"Certainly Duck."

The Duo drove on.

Ah, Toronto, perhaps the most beautiful capital city of Ontario. Home of the world's tallest freestanding structure - Eddie! With its shops and restaurants it projects an image of sophistication. Yet it retains character with a healthy collection of street vendors, street musicians, impoverished bums and protestors who band together to stop the proliferation of orthodontists with fat fingers. Ah, Toronto - a somnambulist's nightmare.

A few phone calls and our heroes were off to meet a man in Queen Street's wino district. He seemed suspicious but unfortunately the diurnal duo did not recognize him - it was the evil co-op workterm landlord Dr. No!

"Don't you think \$450 a month is a little high?" Duck began.

"No."

"Does that include utilities?"

"No."

"Is it furnished?"

"No."

"Will I get a parking space?"

"No."

"Is there a laundromat nearby?"

"No."

"Public transit?"

"No."

"Can we see the place?"

"No. No, wait. Sure you can. It's getting late, let me drive you two there."

"Thanks," replied Duck, and soon they were on their way.

After a short drive, Dr. No pulled into a dark alley and led our heroes to a large door. Suddenly six enormous men, each as evil as a Fed Hall bouncer, seized our heroes.

WHACK!

CRUNCH!

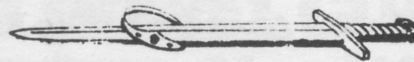
POWIE

BOING BOOM TSCHAK

Severely roughed up, Watman and Duck were thrown through the doors. The door was locked behind them. Our heroes were alone in a dark and noisy place, but soon found another door. Upon opening the door the noise boomed, lights flashed and they realized where they were - IRON MAIDEN! It was a spectacle - screaming fans, girls in tight jeans, Timothy White, noise, lights and IRON MAIDEN!

"We're going to die," screamed Duck as 12 head-bangers threw our two heroes into the flaming bowels of Iron Maiden's mascot Eddie.

The dynamic duo died.



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Wanted--one cheap used dome stadium. Call Art (416) 947-9111

Wanted--a pulse-so I can meet the requirement of York University. Call Mike 888-4233

If anyone knows what the Forgotten Rebels are rebelling against please contact our Manager. - The boys in the band

Last Chance to be Foolish

Wednesday 1st April, Fed Hall

King Karnival Contest!

Prizes for best dressed in drag

Featuring:

The almost crazy, not so foolish
Paul James

Presented by EngSoc and MathSoc

The Computer Science Club proudly presents:

Randall B. Smith

of

Xerox Palo Alto Research Center

speaking on

ARK: The Alternate Reality Kit

The Alternate Reality Kit (ARK) is a project under development in the Xerox PARC System Concepts Laboratory. ARK is an animated environment for creating interactive simulations. It is a kit of parts in which users can assemble their own "micro-worlds." The interface is quite faithful to a physical world metaphor: all objects have a visual presence, a velocity, and can experience forces. One of the objects on the screen is a disembodied hand, which moves around in response to a mouse. The user's "hand" can carry and throw objects, and can press buttons. In ARK, even the underlying simulation laws are represented by physical objects called interactors. Interactors are important actors in the story of how ARK attempts to enable intuition by making abstractions concrete. Although the implementation is still evolving, ARK has already hosted dozens of experimental subjects. This presentation will feature videotape of the system, discuss the underlying motivations for the design, and describe some of the experiments. Future plans, which include making ARK a self-contained programming environment, will be discussed.

Monday, April 6, 1987, 7:00 p.m.
MC5158

Tea and Doughnaughts Served

Where is Mom When We Really Need Her?

An open letter to 'The Big Baboon'

That's right. The layout boys didn't make a mistake. "Just where *is* Mom when you really need her?" That's the question we ask ourselves more and more often of late. We have long understood that the university community at Waterloo consists of a vertical slice of society as a whole (and not the horizontal strata of intellect that the *image* presupposes). And within our community, there is a subgroup which makes its presence known in a persistent manner. These are the individuals who always had "Mom" to clean up after them. Spill a cup of milk. Track mud into the house. Litter your room. "It's O.K. 'cause Mom 'll look after it." There is little evidence to contradict this postulate. Observe the graffiti coated carrels on the fourth floor. Observe the trash that adorns the classrooms. Observe the remnants of sticky posterage that cakes the south-west entrance doors. Observe the bootprints on the (less than two year old) furniture in the third floor lounge. (They *are* fast approaching Campus Center critical mass!) Observe! We urge the reader to tour the C&D lounge this Friday afternoon to view the debris. "Where is Mom when you really need her?"

Most recently, however, one particular member of this league has escalated his/her/its personal campaign for heightened levels of general entropy. That is to say that the external organ of mathNEWS, the "Black Box" (or alternatively, the "flight recorder"), was wrenched from the third floor wall three weeks ago. And that *is* a first.

We can only imagine a finite number of scenarios capable of precipitating this heinous affair:

- **Editorial Comment** - A particular reader of mathNEWS (or possibly the concerned relative of a reader) felt the need to vent their frustration over mathNEWS' content and editorial policy. Full marks for effort. The freedom of expression is an integral component of a "free society." But remember that your approach made the Vandals what they are today. Next time, write (print? dictate?) a note and *place it carefully in the box*.
- **The Thrill of Victory** - A particularly athletic type placed their approach shot to the southwest elevators under the Black Box during the "MC Invitational Croquet Tournament", and had to move the Black Box to obtain an unobstructed backstroke. Remember that such actions are strictly prohibited by the official "Mathie Indoor Croquet Rule Guide". Next time, find another way to cheat and *leave the box alone!*
- **Mutual of Omaha's "Wild Kingdom"** - The filming of "The Neolithic Man's Distant Past" episode prompted the Big Baboon to put on a display for Marlin Perkins' ghost. The Big Baboon simply worked him/herself into a lather and then tore the Black Box from the wall in a demonstration of intellectual prowess. One can imagine subsequent episodes: "The Big Baboon Takes on Wall-Mounted Ashtrays" ... and then "The Dean's Door" (it's *only* fastened by two *tiny* hinges) ... and *then* ... a special two part episode with the Big Baboon atop the MC building fighting off Canada's CF-18 fighter while clutching the "CS-sculpture" (from the front lawn). Catch it in reruns! Next time ... *will there be a next time?*

The point is, Big Baboon, that if your "Mom" were here now, she'd probably pick up after you (again) and mathNEWS wouldn't have to pay to have the Black Box reattached. She'd probably beam with delight if she only knew what a strapping brute you've grown to be. But where's Mom when *we* really need her?

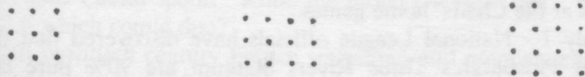
With best wishes for your future demise,
Martin + Siegfried

Math Column

Correct solutions to last issue's problem were received from the Great Gazoo, Ken Lowe, icu2, and Issie Chaimovitch.

My solution (which is not necessarily the best) is as follows. The sum of the characteristics among the 100 people is $70+75+85+90=320$. Let X people have all 4 characteristics meaning that the remaining $100-X$ people have at most 3 characteristics. Thus, $4X+3(100-X)\geq 320$ giving $X\geq 20$. $X=20$ is the minimum with the other 80 people having 3 characteristics each distributed as follows: 30% have char. 2,3,4; 25% have char. 1,3,4; 15% have char. 1,2,4; and 10% have char. 1,2,3.

Since it appears that problems involving something which can be physically played with (e.g. the paper folding puzzle) are most popular, I will give a "broken line through dots" puzzle. The object is to draw a broken line, consisting of the minimum number of joined straight-line segments, that passes through the dots, starting at a dot and ending at a dot. The broken line is allowed to intersect itself. For the 9 dots shown below, there is only one solution of 4 line-segments provided that broken lines which correspond by rotation or reflection are considered to be equivalent. For 12 dots, to keep the number of solutions finite, the line-segments can pass through each dot once only (except dots where one line-segment ends and another begins), but each must pass through at least 2 dots. For this, there are 19 solutions with 5 line-segments. For those who want a real challenge to prepare them for exams, try finding as many of the 112 solutions of 6 line-segments through the 16 dots as possible. The solution will be posted on or near the mathNEWS door, MC 3036, on April 1, 1987.



The above problem comes from:

Shuh, Fredrick; *The Master Book of Mathematical Recreations*; Dover Publications, Inc.; New York; 1968; pg. 336,337

What do you consider a big number? A million? 10^{10} ? How about a googol which is 10^{100} ? This is definitely a big number, but you may well ask if it represents anything in the real world. The number of grains of sand required to fill the earth would only be about 10^{32} , a large number but nothing compared to the googol. Even the number of subatomic particles in the known universe is only about 10^{75} .

To get into the same league as googols, we must leave the world physical things and enter the world of electronics. For example, take the transatlantic phone cable. It stretches 2,250 miles across the Atlantic. Distributed somewhat evenly along its length are 51 electronic amplifiers (also called repeaters) which make up for losses along the cable by each amplifying the strength of the incoming signals approximately a million times. With 51 repeaters, the total amplification reaches a staggering 10^{306} which is so large that even the mighty googol shrinks from its presence in awe.

However, in the world of mathematics, even the googol does not reign supreme. Consider the function $Li(n)$ which approximates the number of primes less than n (denoted by $\pi(n)$) and is defined by:

$$Li(n) = \int_2^n \frac{dx}{\ln(x)}$$

At $n=100,000$, $\pi(n)$ is 9,592 while $Li(n)$ is 9,630 so that $Li(n)$ exceeds $\pi(n)$ by 38. At $n=10$ million, $\pi(n)$ is 664,579 while $Li(n)$ exceeds this by 339. At $n=1$ trillion, $\pi(n)$ is 50,847,534 with $Li(n)$ exceeding this by 1,701. It appears that the function $Li(n)$ is a bit too large and this amount is getting larger. Although the difference between $Li(n)$ and $\pi(n)$ does continue to increase on average, the fluctuations about this average can become so great that for some extremely large value of n , the value of $\pi(n)$ must exceed the estimate given by $Li(n)$. No such numbers have been found, but it has been proven that they do exist and that there must be at least one of them smaller than $10^{10^{34}}$.

The sheer enormity of this number is difficult to appreciate. It has been called the largest number which has ever served a useful purpose in mathematics, that is if you consider the above useful. As can be seen, this number greatly exceeds the googol or any number used in the physical sciences.

The above comes from:

Vergara, William C.; *Mathematics In Everyday Things*; Harper & Row; New York; 1959; pg. 114,115

Lines, Malcolm E.; *A Number For Your Thoughts*; Adam Hilgar Ltd.; Bristol; 1986; pg. 29,30

The Final Alias

Mathematical T.V.

Have you ever watched T.V. but felt guilty about not doing your math homework, or now with exams coming up, not studying for your calculus final? Well, with the new pay T.V. station for real math addicts, you can do both! I have managed to obtain a sneak preview of some of the shows that will soon be available.

M.A.S.H.

M.A.S.H. (Mathematically Addicted Sanitarium & Hospital), located in an isolated region of Korea to keep North American society safe, helps treat people who have overdosed on math. This is done mainly by giving them overdoses of English & Fine Arts to annihilate the effect of the math. This treatment is usually effective, but often has horrifying side effects, such as the individual becoming an engineer.

Warning: people who watch this station, in particular this show, are being monitored as likely candidates to end up in this show the next week.

mathNEWS

Tune in every second week to watch a group of crazed individuals eat pizza and combine articles into a supposedly informative and humorous newspaper for math students. This show is recommended for those who want the inside knowledge of how weird math students' imaginations can be. It is especially recommended as a case study project for those studying psychology.

W5

This show investigates in detail the five most important W's of most mathies: Wronskian's, Weierstrass M-test, Winding numbers, Weddebum's Theorem on finite division rings, and Women.

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Matthew Noneuclid (1849-1936)

A surprising number of students in this faculty are not aware that Matthew Noneuclid, the internationally famous mathematician, was actually born and raised in the area of Kitchener-Waterloo. To improve this terrible situation, we at mathNEWS have decided to publish this short biography.

Matthew Noneuclid was born in the family house, at the corner of King and Weber, in June of 1849. It is widely believed that Matthew's family was indexed by the finite set I . His three brothers, Dan, Frank, and Tom, had been orphaned and forced to fend for themselves three years earlier, and the new addition to their small family appeared to them as merely another mouth to feed.

It is not surprising that they did not have the time to lavish attention on Matt, but let him play outdoors. The young Noneuclid avoided the company of others of his age, and from his earliest years enjoyed crawling along the streets of K-W. As he grew older, he began to take crayon and paper with him on these journeys, and map the routes he followed. The influence of these formative years cannot be underestimated, and samples of his childhood cartography reappear in much of his later mathematical work.

We next hear of Matthew in 1868, on the occasion of his wedding with Catherine Commuta. For the marriage, the bride's family had booked Cauchy Cathedral. All the audience members agree that Catherine looked radiant as she walked down the aisle toward Matthew. The two came closer and closer together, but never managed to converge to the same point. By late in the evening, the church had emptied, and the discouraged couple gave up and returned to their homes.

This episode profoundly influenced Noneuclid's development. He maintained a lifelong devotion to the woman he could not marry, to the exclusion of all other loves. Many years later, when Miss Commuta had passed away, Matthew commemorated her, in a seminal paper on abstract algebra, by bestowing her name on various rings (including the wedding band he had kept).

In 1876, having already established a reputation for himself as a mathematician, Noneuclid moved to Vienna. The European mathematical community welcomed the young man who had already developed the geometry that bears his name. In particular, Matthew established a firm friendship with Ferdinand Vector, a fellow mathematician two years his senior. It is probably with Noneuclid's abel advice that Vector finally developed his mathematical spaces.

After a long and illustrious career, Matthew Noneuclid died on February 29, 1936, in a little publicised duel against the German mathematician Franz Eigen. At issue was Eigen's plagiarism of some results in linear algebra that Noneuclid claimed to have discovered first. Matthew's remains now lie in the Salzburg cemetery, in the unmarked grave adjacent to Mozart's.

Alfred von Newman

Baseball Stories You're Likely To Hear in 1987

April 3 - New York Rangers GM Phil Esposito announced his resignation from the NHL franchise today. Shortly after, he signed a two-year deal as GM for the Chicago White Sox. Phil, in his statement to the press, proclaimed, "I just can't wait till the end of May without making some sort of a trade." Several hours after this announcement, the Sox completed a 35-player four-way deal involving Seattle, Oakland, and the Seibu Lions of the Japanese league.

April 15 - Atlanta's newly acquired second baseman Damaso Garcia was demoted to their Richmond farm club today. Shortly after being informed, Damo set Fulton County Stadium on fire, causing \$1.5 million in damage. This reporter overheard General Manager Bobby Cox saying, "Well, I guess old habits die hard."

April 19 - 48-year-old Phil Niekro, veteran pitcher and 300-game winner, announced his retirement today after his arm fell off in the third inning of the Indians' game against Baltimore. Niekro later said he thought he may have been pushing himself too hard by pitching this season.

May 23 - Roger Clemens won his twentieth game of the season today, leading the Austin City Texaco A's to a victory over the San Antonio Phil's Used Car Lot Tigers. Clemens, 20-0 with an ERA of 0.31 and 412 strikeouts, continues his holdout from the Red Sox; his contract demand now being \$5.3 million a year. The Sox have countered with accrued fines of \$780,000.

June 19 - Royals' right fielder Bo Jackson signed a contract with the Kansas City Chiefs of the NFL today. He will continue to play for the Royals, crossing the parking lot to play running back between innings at the Chiefs' home games.

July 7 - National League officials have discovered that the foul lines at Pittsburgh's Three Rivers Stadium are 90% pure cocaine. Further investigations are to be conducted to determine if the recent hiring of Steve Howe to the grounds crew has anything to do with the incident.

July 29 - Yankees owner George Steinbrenner today fired Billy Martin, but retracted his announcement when he was informed that Lou Piniella was still manager, and that Martin had not been re-hired.

August 10 - California Angels center fielder Gary Pettis was lost for the balance of the season today when a line drive off the bat of Texas slugger Pete Incaviglia went through his chest. Manager Gene Mauch was quoted as saying, "This sure leaves a big hole in centre field for us."

August 26 - Houston reliever Charlie Kerfeld retired today to join the WWF Wrestling circuit.

Sept. 17 - Pope John Paul II interrupted his visit to southern California today to catch a game between the Dodgers and the Cincinnati Reds. Dodgers manager Tommy LaSorda, desperate for help in left field, signed the pontiff to play their next game against the Braves. The pope responded by going 3-for-4 with a triple and two RBI's. John Paul is reportedly asking for a \$400,000 guaranteed contract for 1988.

Vin Garagiola



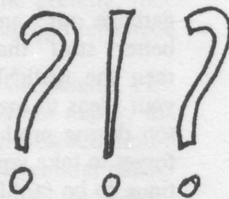
Cryptic

Across

1. In addition, the first person surrounded alternatively (4)
3. A scientist about to hesitate at the end of the quest (10)
10. Relatively speaking, the son of a piano? (10)
11. Out of the loud Toronto museum (4)
13. Maybe can rule at a very small level (7)
14. Obviously after Greek source of power (7)
15. Zero back at the waterfall (3)
16. The bird may fight the things in a line (7)
19. Many an old English deer (3)
20. Make the pastry, quietly that is (3)
21. For a tax on the operation (7)
23. The man is affirmatively Spanish and right (3)
25. After a month, I took half the Bible to be enlarged (7)
28. Fish limb country? (7)
29. Mary could be in the service (4)
30. For popular opinion basis, a mode to Arctic arrangements (10)
32. Rants about the poetry cross-wise (10)
33. Rate of the length sensation (4)

Down

1. The mother, soldier and accountant took fifty by way of tricks (7)
2. Order (again) the back stove (9)
4. The alien female possessive anaesthetic (5)
5. A certain woman—she is French with direction (5)
6. The right year for the sun god (2)
7. I abhor seeing old transportation (5)
8. Deep sorrow noted over the code (7)
9. Promotion over being a beautiful youth (6)
12. Barge directly over the animal (4)
17. Fuss from a party (3)
18. An initial ritual of eating caviar (3)
19. The princess' covering is stripped (9)
20. The vegetable's insect for the serf (7)
21. A pale way to beg (4)
22. With an oriental coin, attempt to guard (6)
24. The root is 'cool, man' (7)
26. A program made inside the Greek letter (5)
27. Central idea of those guys directly (5)
28. A loud defeat of teeth care (5)
31. Like a direction (2)



Return of the GridComments

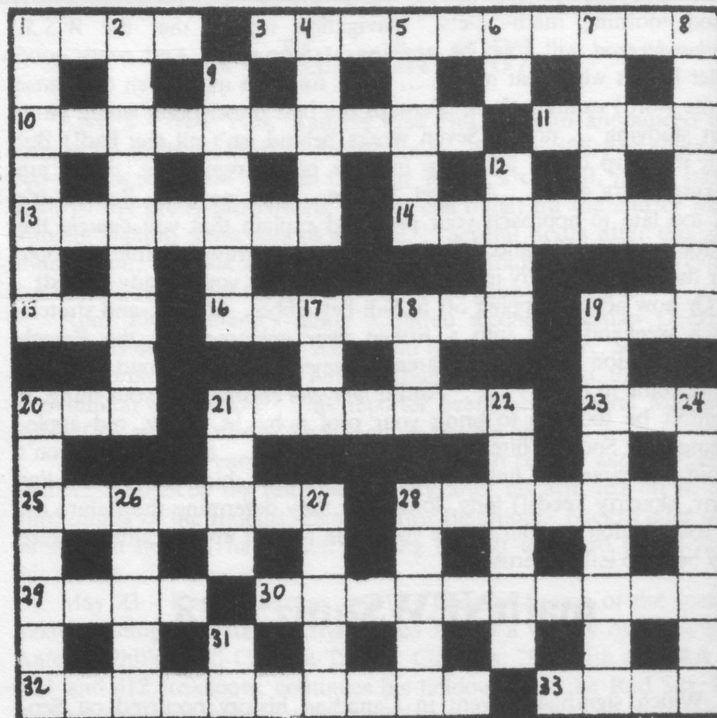
Well, I made it back. Sorry I wasn't here last issue but a change of pace is good sometimes anyway. I thank Tom for filling in on short notice. This being the last issue of the term, there will be no prizes for this puzzle but I hope you enjoy it anyway. The grid this issue is slightly larger than I've been doing this term.

There were a few errors in the solution printed last issue (if anyone cares). 5d should have been 'stylus', 11a should have been 'unable' and 15d should have been 'again'. I hope this didn't cause anyone any problems.

Last issue's puzzle saw a submission rate of 38, of which 20 were correct. By the Woody Tobias Sr. pseudo-random communication mystery method, the winner is **Scott Hayward and Jonathan Koven**. They may pick up their prize at the MathSoc office MC3038 before it closes for the term. Congratulations to all the winners of the term.

Other correct submitters: Woody Tobias Sr. (thanks for the printable soln), len popp B, Johnny Ramone, Irene Bosnich, Smurf, Colin B., S¹AS, Phideaux, Gary Merke, Scottie's little softie, Jeff ('and the noisy bastards sitting with me'), Cathy B., Karen Joyce, Mike Hess, Artie S., Jim Sankey, Lance Sibley, Robert Brown, and Sen. Ted Kennedy (we're honoured (or not)).

Further entities: Ozzy Osborne, Manute Bol, Johnnie Knowall, MC Miker J & DG Sven, Blue Giraffes, JJ, Bored & Confused & Fantasizing in PMATH, Mark and Alan, 3M & D, Paul Myers & Melanie Leganchuk, Chris & Pookey, Gary M, Roger Spitzig & Barry Esau, D.G.R., Jim Spallin & Manny Weiser, Kimberley Brady & Shane Donovan & Andrew, Steve 'Patch' Johnson & Max, and Orpheus & Kiriakis.



Conventional

Across

1. PONDER
3. HANDLE
10. IMPORTANT BIRTHDAY
11. SMUDGE
13. OVAL
14. UNCERTAIN
15. IN WHAT WAY?
16. ANSWER
19. CUT DOWN
20. MISTAKE
21. TRUSTWORTHY
23. POINT
25. TRESPASS
28. DOUSE
29. ___ FITZGERALD
30. WOMANISH
32. SOFTNESS
33. TALK

Down

1. SHAKESPEARE
2. OIL SOURCE
4. MUSICAL
5. ANGRY
6. OUT OF BED
7. GIVE OUT
8. COMMON AILMENT (hyph.)
9. AIDE
12. CROSSHATCH
17. POSITIONED
18. AWAY
19. CONSEQUENCE
20. APPARENT
21. MEDICINE
22. CLEAR
24. HINDER
26. CLAW
27. MISCHIEVOUS
28. THOUGHTS
31. EXIST

Favourite body of water: Farrah's Faucet, Lake Wobegon, Puget Sound, my brain, Elliot Lake, A hot bath with a naked member of the opposite sex, my bathtub, Carla (nice surface tension), Kirstie Alley, middle toilet-washroom by MathSoc, ???, Altersee in Salzkammergut, my goldfish Marvin's bowl, tall & dark & beautiful.

Other comments of the week: /* nil */, your Doobies itch my Scrumpuks (I'm sorry, it was unintentional), the buzzards returned to Ohio—it must be spring, Will the cat have kittens?, too easy, the swallows return to Capistrano (and fletniowski returns to mN), life's a drag for a dog with no legs ... or a student in M234B, cannibalism—what a great hobby, Doug Wright wears Underoos!, the bad air in the prison was becoming insupportable to Julien, It's a hi-tech lamb chopper, GridWords won't stop us.

Thanx for making this term worthwhile. I will be back in the fall as well as this spring (so get your mN subscriptions in!). With a final good-bye, I leave you with this thought (c/o 'Sen. Ted Kennedy' (or not))—if pro is the opposite of con, what is the opposite of progress?

fletniowski