

Volume 19 Number 9
Tuesday, March 27,
1979

math NEWS

The Debate Goes On

On Tuesday, March 20, 1979, the Mathematics Faculty council held a meeting to discuss, amongst other things, two motions regarding course load restrictions. I feel that the content of both these motions has been discussed at length, both in mathNEWS and in Imprint. (Further information is available in Mathsoc, MC3038). The purpose of this article is to inform the students of what went on at that meeting, and also to point out what I consider to be some of the beneficial points of the matter.

Shortly after the first motion was proposed, Dave Newell presented a petition from the math students containing over 900 signatures (over 40% of the fulltime undergrad math students this term). After much discussion about both motions, a vote was taken on motion 1 and it was overwhelmingly defeated. Discussion on motion 2 continued until the chair ruled that a special meeting was necessary. So, **there will be a meeting on Tuesday, March 27 (today) in MC5158, at 3:30pm.** All interested people are encouraged to attend. At this time, as well as discussing motion 2, another motion which would require a student to spend a minimum number of terms on campus to get a General or Honours Math Degree, will be proposed. This motion is of special concern to foreign students, who pay twice the tuition of Canadian students, and may wish to obtain a General degree in 3 1/2 years instead of four.

I promised some discussion of the brighter side of this issue, and here are some of the good side-effects. 1) Many students have learned what the Faculty council is, what it does, and many (like myself) have found a reason to go to their first faculty council meeting.

2) At a time when apathy is a great problem on campus, (Mathsoc had less than half the seats filled when nominations closed this term) having over 40% of full time math students showing **any** concern is a real accomplishment.

3) We have (I hope) shown the Math Faculty Council that we are concerned with regulations governing our degree, and the regulations concerning the students who will be here after we graduate.

If you have any questions or comments do not hesitate to come and see us. We care.

Valerie Carr
Mathsoc Vice President

Arts Centre News

On Thursday, March 29, at 8 p.m. the UW Arts Centre Memorable Music Makers series last concert will be given. This is the revue "Two Score - And More", it is a musical anecdote of the four decades spanning the Victorian era and the Jazz Age. Price is \$6.00 (Stu./Sen \$4.50).

Creative clothing as body sculpture is a new artistic concept that has been causing great excitement in the US and has just recently been introduced into Canada. The first cross-country competition in this field is to be held here on the 27th of March (today) at the Humanities Theatre. This is the Creative Clothing Pageant. Tickets are \$2.00, proceeds going to the Gallery's Permanent Collection.

Not Number 1 ... But Close

Under the able guidance of Dr. B. FORTE, the U of W Putnam Team of Michael Albert, Rajiv Gupta and Geoffrey Mess stood 3rd in the 1978 competition. The competition, which is designed to stimulate a healthy rivalry in mathematical studies in American and Canadian universities, attracted more than 2000 contestants from 339 schools this year.

In team competition, only the top 5 are ranked. The next 5 teams receive Honourable Mention. The 1978 rankings are given below (1977 results in brackets).

1. Case Western Reserve University (HM)
2. Washington University (1)
3. University of Waterloo (HM)
4. Harvard University (HM)
5. California Institute of Technology (3)

In individual competition, Michael Albert (Year 1 Regular) and Geoffrey Mess (Year 3 AM/PM) placed in the top 40 contestants. The following individuals (in alphabetical order) placed in the top 200: Rajiv Gupta (Year 4 PM/C&O), Bradd Hart (Year 2 Regular), Mike Hollosi (Year 4 Co-op AM/CS), Hugh McCague (Year 2 Co-op), Duncan Murdoch (Year 2 Regular), Oscar Nierstrasz (Year 4 PM/C&O), Bob Tibshirani (Year 4 Co-op CS/Stat), Andrew White (Year 3 AM), David Wright (Year 4 Co-op Stat) and David Yach (Year 1 Co-op). Only Harvard and Princeton had more students in the top 200. In total, 29 UW students wrote the contest.

FEDERACTION

This column is rather long as it will be the first Federaction column to appear in mathNEWS in four weeks. The last two issues of mathNEWS having been cancelled, this is an amalgam of four columns.

Today the Math Faculty Council will once again deal with motions concerning course limits. While the more repressive Motion #1 was overwhelmingly defeated last week, Math students still face the possibility of a four year sentence with little chance of parole.

Some faculty members contend that "standard" course loads would raise standards, but I believe they are missing the point. If one wants to raise standards, one will increase the number of courses required or improve the content of the courses, not implement an arbitrary bureaucratic standard course load. Standard course load restrictions not only prevent a student who fails a few courses from catching up, but they also prevent (or at least discourage) superior students from finishing early. These students are thus prevented from entering the work force or Grad School early and thus from giving a more meaningful contribution to their field. Standard course loads also restrict and discriminate against foreign students who want to finish early so they won't have to pay as much of the discriminatory differential fee. Students on OSAP are also hurt as they are encouraged by the government to finish their studies as soon as possible, else they will be financially penalised.

I believe the real reason for these "standard" course motions is to keep people in University longer and thus make the University longer and thus make the University more money. The University does not get any extra tuition and BIU's for courses taken above the standard course load, but would get them if the courses were taken in an extra term. Also with students taking fewer courses per term, there may be a need for less professors, so some positions may be cut in order to save the University money.

In the past few weeks a health inspector by the name of Mr Hartman has made a number of visits to our C&D stand. His main concern has been the previous lack of labels on the subs sold at our stand. While we should be willing to comply with the health laws, I feel it would be easier if we had a sign beside the stand listing the ingredients of the subs, since most students

know what the subs contain. Requiring labels seems to be going a bit too far. However what disturbed me most about Hartman was the time he seemed to spend bad-mouthing our supplier, Mr Sandwich. During his first visit he was very concerned about the lack of labels, but was not even aware of the existence of other outlets on campus where subs made by another supplier were sold.

By now you should be aware of the results of the Imprint referendum. The paper recieved about 2020 yes votes and 600 no votes and about 18 spoiled ballots. While for the most part I am glad they won, I am disappointed that the vote was not closer. I am afraid the Imprint will get over confident, with a landslide victory. I hope that the vote indicates popular support for the Imprint, not a vote against the Chevron.

Now that the Imprint has a fee, it can get off our backs. In turn we can be nice to the Imprinters and give them a chance. Since most of the leadership will be leaving, they can start afresh and not worry about the Chevron. If the quality evident in the last few issues continues it may be not just a good paper, but a great paper. Whatever you feel about the paper, I think you should give it a chance, and at this time I would be against organizing any refund or referendum campaigns against the Imprint.

Closing on a mathematical note (?? - ed), the co-hacks of the week are Kevin Martin and Ashok Patel. Kevin and Ashok are active users of the Honeywell and the Photon typesetter. Their work for mathNEWS last term earned them the title "the Photon twins". Ashok is a computer science student, now working off-term; Kevin is considered a pseudo-mathie. He is legally a Physics student but spends a lot of time in the Math Building. Both have been very useful to mathNEWS.

Since this is the last mathNEWS of the term, this will be the last Federaction. Depending on who the editor is next term I may write a column, but it will be different, since quite frankly IM getting bored with the Federation.

jjlong

(I would like to thank Mr Long on behalf of the past editors and for myself for a great deal of work for the various manifestations of the paper. Despite conflict with some editors and with the people written about, jj has written and worked since time immemorial. Thanx, jj. - andrew malton (ed))

Announcement

The winners of the Campus Centre Board / Math Soc. Contract Bridge Tournament were Steve Locke and Valerie Carr. Glenn Ashton and Stephen Char placed second and Greg Bezoff and John Ellis brought up the rear winning the book by prize.

Students Yat Tai (AM & C&O) and Clement Tong (CS) should have appeared on the Dean's Honours List printed last month. Both completed third year in the Regular Programme in December.

My calculus prof oddly states
That a "path" in R3 integrates
To a one-sided fence;
Mobius? No...nonsense!
For a plane at its base he locates!

ADS

Apt. To Share.

Large, spacious one-bedroom apartment on 485 Parkside Drive #203. Fully carpeted, utilities included, TV, laundry in building, room-mate wanted immediately for Spring term, approx \$100/month. For Info call John at 886-2319 or ext. 2324.

House Wanted

Help! Four upper-year students need to rent/lease a house/townhouse from September, for a year. Will place deposit to hold. Within 1/2 hr. of University, please. Call 886-5495 (Richard) or contact rwleber on the 'bun.

There is a reasonable backlog of Computer Science Club news right now, enough that we really have neither time nor space to cover it fully! We have had a meeting with a talk by MFCF director Morven Gentleman, a talk by Eric Mackie about Widjet, and (by the time you read this), a talk by Tom Cargill about the work of the Portability Research Group. There was also an exciting meeting in Guelph with the executive of "The Canadian Society of Computing Students", and some amusing incidents on Campus Day.

Two weeks ago, the CSC had Dr. Morven Gentleman, Director of the Math Faculty Computing Facility, as the featured speaker. Drawing a capacity crowd to the Colloquium room (M&C 5158), Dr. Gentleman presented his talk on the history and future of the MFCF.

Breaking a CSC tradition, President Robert Biddle started the talk on time. This was fortunate, as the last person did not leave until 11:30 p.m.! The talk itself lasted an hour and a half, and was most interesting, both from an anecdotal viewpoint (did *you* know that the Red Pit's computers were financed as furniture?), and from the viewpoint of a computer user at UniWat.

Dr. Gentleman opened his talk on how people perceive computers, pointing out the dichotomy in the perceptions between computer scientists and computer users elsewhere in the university community - the computer scientists want a vehicle for development, testing, and running of various software and algorithms; whereas other users of the machine want a stable, dependable system so that mundane software will run with a minimum of problems.

Back in 1972, it became evident that the computers available at UniWat were not suited for certain tasks - interactive graphics, timesharing, and so on - and that there was a need for a computer that could handle such tasks. At the time, the only interactive system available at UniWat was a 360 Model 50 running APL. It was noted that, for the rent that was being paid on the Model 50, the Math Faculty could purchase one of several general purpose timesharing machines. With Professors Gentleman and Eric Manning as the driving forces, the Math Faculty appraised several machines, and asked for offers. It became clear that there were only two real choices - a DEC PDP-10 and a Honeywell 6050. Early sentiment gave preference to the PDP-10. In order to place one of their computers in a major university, however, Honeywell was willing to set up a special

CSC Flash!

arrangement for the MFCF, in which MFCF-developed software would be used as payment for various Honeywell hardware and software. DEC, on the other hand, with many of its computers in university environments, was not willing to do this. Opinions were still more or less evenly divided until the last moment, when Honeywell dropped their asking price and DEC raised theirs: therefore, the MFCF opted for the Honeywell 6050.

Time passed, and the 6050 became a 6060, which in turn became a Level 66/60, with much of the hardware upgrades being obtained in exchange for Waterloo software. However, the user community also evolved. In 1973, there were less than 100 accounts on the Honeywell, the owners of which were willing to endure the yo-yo performance of the relatively unstable system; today, there are at least 2000 accounts, the majority of which are used for course assignments, necessitating a reliable and stable system.

And what of the future? As most of you are aware, the MFCF Honeywell is saturated; at times of heavy usage (such as the day of a major assignment), people are queued several deep, waiting for a terminal to become available; the response of the system is poor, and turnaround time for assignments gets worse and worse. At present, the maximum number of simultaneous users is 72; extrapolating in a very conservative manner indicates that the demand in a few years would be sufficient for 350 to 400 simultaneous users in Math alone. Clearly, the situation cannot stand as is. What can be done to change this situation? Basically, according to Professor Gentleman, there are three major options: 1) Upgrade the existing machine by buying more memory and processors; 2) obtain two or three large minicomputers running their own timesharing systems (UNIX or something similar) but (likely) sharing other peripherals (disc drives, etc.) with the existing mainframe; or 3) get many small mini or micro based systems with several users per machine, each machine for a certain subset of users. For example, graphics people would have their own machine or machines; typesetting would be done on another, etc. This would tend to reduce the load on the main machine which would still be used by people who needed a large machine and its software (Pascal compilations, simulations, and the like).

The cost comparison of the above options shows option 3) as the likely cost

winner. At present, the Honeywell can support (in a manner of speaking) 72 users simultaneously; the list price of the machine is roughly \$3,500,000 - a per user cost of \$50,000! Option 2 comes in at about \$15,000 per user while choice 3 is somewhere in the region of \$9-10,000 per user.

Much discussion was evoked by the last set of figures, and the discussions continued until well past 11:00 p.m. There was also much discussion in the post mortem of the effect personal computers and cheap terminals would have on the demand for computing - why wait in line for a terminal if you can buy one for, say, \$300 - no more than the price of a good hand calculator - and dial up the 'bun (if you can get a phone line - yet another problem). No obvious solutions, but a very interesting and important talk.

WIDJET, for anyone beyond its sphere of influence, is an interactive job entry terminal system used in conjunction with the batch monitor on the IBM, by students taking a variety of (mostly lower year) computer science courses. The talk by Eric Mackie was interesting both as a technical discussion of WIDJET, and as a non-technical discussion of why it is seen by many students as unsuccessful.

Widjet was developed by the Computer Systems Group (largely as a research effort) although the Widjet systems normally used by students are administered by the Department of Computing Services. Both groups see the main advantage of Widjet as simply the freedom from punched cards, keypunches, and shiploads of paper with funny green vertical stripes. Aside from being a more civilized way of using computers, this also means that DCS save a good deal of money in supplies every year. As Mr. Mackie pointed out, they save enough money every year to buy a system comparable to Math/Unix. So far the CSC has not been able to determine just where DCS has been stashing these Unix systems, but we are very interested in examining the heating tunnels connecting the Math building to the Physical Resources complex.

In order to replace the accoutrements of stone age computing in an economic fashion, it is naturally necessary for a Widjet system to be able to support a large number of simultaneous users in an economical way. Basically, it does this by restricting the set of things a user may do. It has been observed for some time that users of a general purpose timesharing system (like the MFCF Honeywell TSS, for instance) spend most of their time doing simple things editing text being the most common. The Widjet system itself

handles these common but simple tasks, and the heavy workload constituted by compilation and execution of user's programmes is sent with best regards to the IBM system.

It is generally accepted that this approach works. However, as many students will tell you, the reality can be different. Eric Mackie said there seemed to be two classes of complaints about Widjet. Many think that the performance is poor, that it's down often, and that it's generally rather slow. He claimed that Widjet is in fact both reliable and fast, and that the admittedly obvious shortcomings in the situation are due to the IBM systems, especially the doddering 360/75 which is due to be replaced later this year.

The other class of critical comment seemed to concern the running of Widjet. It seems that DCS does not exactly give the users of Widjet first class service. When problems develop with the IBM hardware, for instance, it can be a very long time before students have an idea that something is wrong at all, and seldom are they really given indication of what precisely is wrong, the effects it will have on them, and an estimate of the time before restoration of normal service. Mr. Mackie further pointed out that there really does not seem to be any DCS person whose responsibility it is to even listen to and record problems or complaints with Widjet, technical or otherwise. When asked specifically who a student could complain to about the Widjet service, Mr. Mackie suggested the DCS director, Paul Dirksen.

There was the usual good attendance at the talk, and everyone seemed to gain appreciation of the design considerations, the attractiveness, and of possible future developments of Widjet. Even for those in attendance who had used Widjet very often, it was probably the first talk by someone heavily involved with the design of Widjet heard.

Thanks very much again to Eric Mackie.

The Computer Systems Group, developers of Widjet (and of many software products used here at Waterloo and distributed far and wide) will be the topic of a CSC talk promised by Wes Graham for this May.

Loyal mathNEWS readers will remember from two weeks or so ago that the fledgling Canadian Society of Computing Students was out to get the support

of the Computer Science department, the CSC, and, directly, all you CS students. There was a meeting in Guelph shortly after that article appeared, and the CSC was represented by Robert Biddle and Russell Crook. We had severe misgivings about the way CSCS had described themselves in their letter of introduction, and about the motives and means of national organization. However, we felt we should take them a bit seriously, because we feel that any organization that claims to speak for Canadian CS students should be of interest and concern to the many CS students here at Waterloo. We had to see if the organizers of CSCS were worth taking seriously, and whether we could be of help by knocking some sense into them.

Though invitations had been sent to a large number of Ontario universities, the only people who showed up for the meeting were: Jerrold Schiff (Western, president of CSCS); Barry Smith (Guelph, vp of CSCS); Russell and myself; and two friends of mine that happened to be visiting Guelph. The meeting was originally intended to decide on material for a CSCS newsletter, but instead it turned out to be an examination of CSCS itself.

I could go on and on about the humorous incidents at the meeting, but in retrospect it all seems rather depressing. The whole organization seems to be the ill thought out grand scheme of Mr. Schiff, and even he was unable to defend his ideas much at all. Russell and I had some fairly concrete (though sweeping) criticisms: that CSCS was an organization of people, rather than of clubs, we felt communication and maintenance would very disastrously difficult; that CSCS was making a single jump from two Universities in Southern Ontario to National scope; that the actual benefits likely to result from CSCS were rather few; that CSCS seemed to have ignored consulting several universities with large CS student communities (including us); and some other points. We ended up convincing Barry and then Jerrold of the validity of our points. In the course of discussion, we became less and less impressed with what CSCS might have become. We had doubts about their competence in both organization and CS in general, and we generally felt alienated from the kind of outfit Jerrold wanted CSCS to be. We, for instance, could not seriously see CS students lobbying the government for professional recognition, did not see affiliation with CIPS and DPMA as a good thing, and did not see programming contests as a reasonable activity.

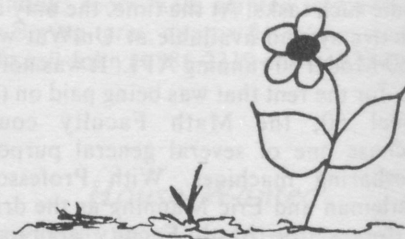
Having complained a lot, we explained that we did think there might be advan-

tages to having links between computer science clubs, and that Ontario, maybe just Southern Ontario was the right size to start with. We agreed to send other clubs meeting schedules, and any information we feel might be of interest. If the time for the CSCS is here, and we are too blind to see it, the informal organization we will have will quickly grow. As Russell said, "Notice that the really professional house builders start at the bottom."

I should point out that a lot of the above may be coloured with my own views, that I admit. However I did solicit comments in the last mathNEWS, and everyone that subsequently spoke to me agreed. Do not expect to see too much from CSCS in the near future. Anyone wanting further details about this matter is welcome to talk to me if they can find me.

The Computer Science Club meeting today (meaning March 22nd (meaning "Tomorrow")) is the last scheduled for the Winter term. I would thus like to thank all the people who have helped with meetings and other CSC activities through the term. Especially I'd like to thank the people that gave talks at CSC meetings this term: Ted Nelson; The panel of microcomputer owners (Dean Edmonds, Brad Templeton, Mike Sargent, Peter Rowley, Tom Keith, and Danny Dodge); Ron Baecker; Rick Beach; Morven Gentleman; Eric Mackie; and Tom Cargill. I would also like to thank the Dalek for not disintegrating any guest speakers.

Robert Biddle



IT'S SPRING !!!

math ETICS

Students Show Kindness To (Aging) Profs

Way back on the first Friday of March the Math profs put everything they had on the ice at St. Clements Arena. They were up against a magnificent (Prez Bezoff excluded) collection of mathies who formed the student team. The faculty/student broomball game was a prelude to Mathweek; it was intended to provide the people who do things on behalf of Math students a chance to get together and have some fun.

The game is held in each of the Fall and Winter terms. Our trophy dates to Fall '77, giving game results as 2-2, 2-1 for the Faculty in W'78, but a 3-0 slaughter by the students in last Fall's classic. This term's game was the profs chance to get revenge and in view of the fact they had two weeks notice to practice and get their act together, we were fully expecting to meet a semi-pro team.

Broomball for fun doesn't require all that much skill, just an ability to move on ice (at least to move as fast as your opponent). Front line movers for the faculty were Profs. Ian McGee, Ron "Scoinsky" Scoins, Jock MacKay, Rob Brown and RJBeach. The token female rule put Bev Marshman, Dayle Vraets, and Cynthia Struthers into action (what a mistake!). Dave Matthews and John Bullen, along with grads ringers Mark Krailo and Don Seeler, rounded out the Faculty side. Student play was highlighted by regulars Phil Kelly, Ken Lynch, Geoff Hains, and rookie efforts by Rob Pollard, Dave Osterman, and the non-mathletes on society council.

Students took the early lead on a blast by Ken Lynch. The bad-angle shot was only intended to scare the goalie but he fooled everyone by letting it in! Not much happened for a little while as the profs tried to figure how to get theball into our end. Finally, with a swarm of people around the student net, the ball managed to hit Cynthia and fall at her feet. Only then was she able to sweep it past Phil Kelly to break the Faculty's 11 month scoring draught.

It was necessary to demonstrate student superiority before the end of the half, so who better than new Mathsoc President Greg Bezoff to put us back in the lead? Greg flipped one in from the slot, demonstrating proper shooting styles to the amazed defenders. The half ended 2-1 for us but a political situation was arising.

Such celebrities as Dean Forbes, Profs Brillinger et al were at a curriculum meeting, strategically scheduled at 3:30 on a Friday afternoon such that they couldn't be at the game. (Even Veronica used that as an excuse!) If the students repeated the fall game plan and once again thrashed the faculty we might never again see the athletic prowess of the department heads. An impromptu student meeting resulting in approval of a motion to let the game end in a tie, thus appealing to the need to help the Faculty in some small manner. Again, Cynthia was nominated to score their goal, and a few minutes into the second half Phil let her slip one by. With the scoreboard showing 2-2 we were confident that we had done the right thing. Several times during the remainder of the game students had to overcome the competitive urge and take easy shots or miss the net entirely, feigning anger at their inability to score in a 5.5 by 7 foot net.

When the game ended we expressed our pleasure at the outcome of the game, realizing a tie was in the best interests of all. That led to the celebrations at the St. Clements Hospitality House. Both teams were able to enjoy their refreshments in a friendly atmosphere without having to drown their sorrows because of the agonies of defeat.

I think all participants would have to consider the game a great success. The interest and effort put forth by the Faculty members was certainly appreciated by the students. The Stats contingent seemed in especially good spirits after the game, although they claimed to be too tired to arise when the music started. Imagine a shy diminutive second year student failing to get the profs to disco? They must be getting old!

MOST VALUABLE PLAYERS

Men's Competitive Sports

HOCKEY:

Math A....DOUG HERN

Math B....HAROLD TOHANA

FLOOR HOCKEY:

Dead Ringers....BOB THORN

BASKETBALL:

Math B Astars....DEAN NEWMAN

RECREATIONAL

BROOMBALL:

Mathsochists:....DOUG McINROY

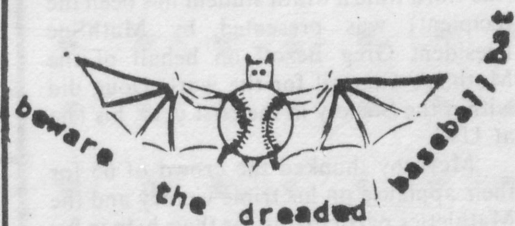
INDOOR SOCCER:....DEREK JOHN-
STONE

INNERTUBE WATERPOLO:

Seahorses....KATHY KROPP (again!)

VOLLEYBALL:

Slammers...PAM STREETER



#18 LOST

At the Friday Mathsoc Broomball Tournament (McCormick Arena), a red Math hockey sweater, #18, was left behind. The sweaters were in use by the broomball team and one did not get returned. That was the only casualty in two terms of use, and it breaks up a team set. If anyone knows where #18 (red, white trim, "MATH" diagonal on front) is, please return it to Mathsoc.

NOTE** the hockey sweaters are for sale (\$15,\$16) but first choice goes to the team players.

Mathletes Hold Banquet

The Mathematics Society held its Mathletics Banquet on Monday in the Laurel Room of South Campus Hall. The banquet, which is held each semester features a smorgasbord meal and the awarding of trophies to the outstanding participants in the various MathSoc athletic activities within the intramural programme.

Participants from sports such as basketball, indoor soccer, waterpolo, volleyball, and hockey received their awards from Mathletics Directors Doug McInroy and Charlene Sam. The floor hockey team received the UW Intramural Trophy for winning the B league championship; League convenor Denis Conway presented the award to team captain George McClintock.

The high point of the evening came when banquet organizer Doug McInroy was presented with three awards. Doug won the MVP award for broomball as voted on by the players on his team. He was also presented with the Robert Allan McCormick Memorial Award by last year's winner Guy Caporicci. This award (originally presented by the UW Circle K Club, in memory of a former student) is given to a student who has made an outstanding contribution towards intramurals at the University in the past year. Then he was awarded an honorary lifetime membership in Math Society. This award (the third time a Math student has been the recipient) was presented by MathSoc President Greg Bezoff on behalf of the MathSoc Council for the work Doug did within the Society in the past year, his last at UW.

McInroy thanked the crowd of 65 for their applause on his triple victory and the Mathletics participants for their help in his winning of these awards.

What a language! The name suits it fine
For in SPITBOL each program of mine
Though syntactically true,
The machine craves to chew.
Misinterpret, and spit out each line!

INTRAMURAL AWARDS

The two individual awards presented by the intramural department went to Math students!

The JUDSON WHITESIDE AWARD: Awarded annually to the male student who exemplifies the highest degree of excellence in skill and participation in the Men's IM programme.

The award this year went to **Bruce Rodrigues**. Bruce is a third year Math student in residence at St. Jeromes College, and to say the least, he was active in sports over the year. As a participant in more than a dozen individual and team events he was able to demonstrate his abilities throughout a wide range of sports.

ROBERT ALLAN McCORMICK TROPHY: Awarded annually to the student active in Intramurals who has made the most significant contribution to the programme as a competitor and/or administrator.

The 1978-79 recipient is **Doug McInroy**. Doug is in his final year in the Math faculty and his work as the society Mathletics Director over the past year was largely responsible for his nomination. His experience as a league convenor, referee, and referee-in-chief were put to good use on behalf of all intramural participants. In the Fall term the Math unit earned both the Fryer and Townson trophies as the best competitive unit and best participating unit within the programme. A repeat performance in the Winter term was not to be had, as St. Jeromes rebounded to claim both trophies, Math placing second in each category.



CS 240 STUDENT

BALL GLORY

MATH-B Lose 5-4 in Ball Hockey Final

The ball hockey season came to an end Tuesday of last week. Unfortunately, it was a sad end for the Math team as they lost the final game 5-4 to the FLEET FEET. After struggling through the beginning of the season, the team made a tremendous comeback, eliminating several highly ranked teams to reach the finals.

The game was a physical match-up with frequent skirmishes occurring in front of both goals. Despite MATH's superlative effort, the breaks just didn't go our way. Much credit should go to the FlatFeet goaltender who consistently stopped wave after wave of MATH player shots. After going ahead 1-0, the FlatFeet scored four unanswered goals and led 5-2 before the MATHies rallied with two late goals. Unfortunately, they just fell short as they missed several excellent scoring opportunities in the dying moments of the game.

The MATH team entered the final game after having defeated the BEARDED CLAMS 6-5 on an overtime goal by Ian Coates. This game was a gruelling match from start to finish. Slightly short on size, height, and weight, we had to be considered no match for the tall and experienced Clams. Going into the tournament, we were ranked 16th out of 22 teams while the Bearded Clams were ranked first and received an automatic bye into the semi-final round.

The game was a true example of what the team has been striving for all season. Despite a slow start, including two losses (one, a 6-0 decision to the Clams), the team started to gel and play as a unit. A goaltender change in midseason also proved helpful as both the new players added to the team's strength. We lost only one other game, a 9-8 decision to the North Stars, a game which MATH led at one point 8-3.

The guys on the team asked me one thing when I was writing this article and that is to mention that there are no superstars in this. All the team's success should be credited to team effort. Sure, the team has some explosive scorers, but no player stands out over any other. The team strategy is based on cohesion, forechecking and just plain running your ass off! The defense is very strong and experienced.

continued on page 7

WRAP-UP

Well, that's it. The banquet was the final official sports event of the term. Our guys lost the ball hockey championship (elsewhere in this issue) and the only things left are possible exhibition games between the Faculty and Math A in hockey, and Mathsoc vs Engsoc in broomball. Time deadlines will decide those, but for now it's all over.

First off, the congratulations. The **Dead Ringers** won the B Floor Hockey Championship, beating top opponents all along the way. No one has ever heard of a Math team winning the ring-style hockey, so hearty good wishes to the eleven guys and their excellent teamwork!

Our **MATH A** hockey team had hopes of a repeat performance to capture the Bullbrook Cup dashed when the Co-op Canadians squeaked out a 2-1 semi-final victory. The **MATH B** team extended their season with a superb effort from their 11th place finish as they scored playoff wins over 6th and 4th place finishers, but came up against Last Chance, #1, and lost despite their team effort. Last Chance and Team Soap met in the B finals with the Soaps eaking out a 1-0 overtime championship victory. Both of the finalists were Math teams, so I can easily applaud their performance along with the fine efforts of our own two teams. A special note of thanks to the team captains for their organizing and on-ice performances: **Doug Hern** and **Murray Spivey** (MATH A), **Mark Carruthers** (MATH B) **Dave Thexton** (Last Chance) and **Steve Kozlowski** (Team Soap).

Our basketball players regrouped after the Fall term and once again **Ernie Briginshaw** took the captain's role. They did a little better than last term, played better as a team, and hopefully enjoyed their games.

Much of the ideals of the intramural sports is based on fun for the participants. I'm sure that was no problem for the Seahorses in Innertube Waterpolo, the Mathsocists in Broomball, the Slammers in Volleyball, the Ball Hockey teams, or the Indoor Soccer team. Those sports are designed for recreational activity, and if things get tense on occasion it is up to the players to take control. The ones who benefitted were those who took the time to play, and you can't force that on anyone. Again, my thanks to those who assumed the captains role, either officially or just for one game, your help was appreciated by all.

The highlights??

Not ignoring last term's fantastic playoff run by the A hockey team or the fun of the Mathies Tuesday night broomball, my choice for the fall had to be the awarding of the Fryer and Townson trophies. It was the first time for a faculty unit to receive them both, and represented a fine overall effort by the Math students. This past winter term has been something else. It was too much to expect a repeat performance but the desire to see the fourth year students end off on a winning note was still at the top of the list.

Right now, as I think of the term, the standouts include: the Dead Ringers playoff games; a fun Faculty-Student (yes, Student!) broomball game; the Engineers showing up at 8am to play in the Math Broomball Tournament; the players eighteen guys suiting up for a Math B playoff game and skating their opponents right off the ice; goaltenders like Rick Kean and John Southcott, voluntarily playing for other teams, even when Rick played for Co-op in the a semi-final; the fun and team spirit in all the sports, usually ending off with a beer at the 'Loo.

Personally I have to be pleased with the past year in sports. Regardless of the turn of events, I don't think any sacrifices were made. I came in contact with a lot of interesting people, and I wish them all the best of luck in future endeavours. (*ajmalton -ed is after me to hurry up, and Charlene is supposed to drag me away, it seems as if I've been typing forever. Andrew has put up with endless excuses over the term while waiting for my Athletics stuff*)

The end; thanks to everyone involved in UW's Intramural programme and Mathsoc!

Doug

Mathletics Director '78-79



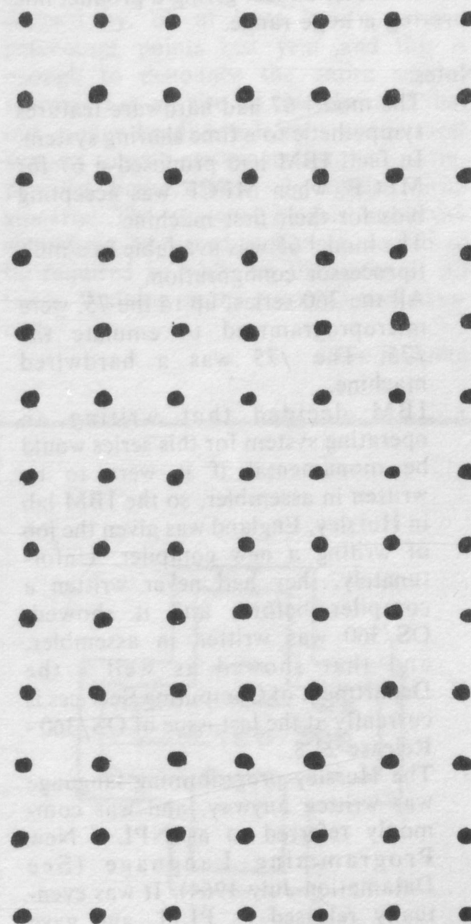
continued from page 6

and, despite the addition of several "rookies" late in the season, played as if they had known each other all their lives. This fact has contributed much to the team's success. However, most of the success lies in the vocal encouragement the players on the court receive from the bench. This truly exemplifies the team spirit that exists on the MATH TEAM.

To conclude this article, I would like to thank Tom Kuntz, the player-coach, for organizing and encouraging the team throughout the term. Doug McInroy, our player-general-manager (who incidently scored the winning goal in the quarter final game against St. Jeromes, his second goal of the season), also deserves credit because of the beer he purchased for the post-game festivities.

Tom Wojdan

SQUARE FOR PLAYING DOTS



New Machines for DCS

This article was written in a hurry, based on back issues of Datamation. As a result, any relation to reality is purely by coincidence.

The IBM System/360 was announced in April 1964. Prior to this announcement, the majority of computer systems were "one-shot" systems, based on some processor. When that processor ran out of horsepower, an upgrade to a more powerful processor usually involved a total rewrite, or more commonly, running an emulator on your new machine to run your old programs.

System/360 changed that completely. A family of computers was announced, which were completely upward compatible with each other. In addition, if all hardware features were available on a lower model, programs were downward compatible as well. Upgrading your computer system was, in theory, a matter of rolling one box out the door, rolling a new one in, and plugging it in. The initial models were the 30, 40, 50, 60, 62 and 70. There were 44 I/O devices available. The models 20, 25, 44, 65, 67, 75, 85, 91, 92 and 195 were later added, giving a product line covering a huge range.

Notes:

- The model 67 had hardware features sympathetic to a time sharing system. In fact, IBM had proposed a 67 for MFCF, when MFCF was accepting bids for their first machine.
- The model 65 was available in a multiprocessor configuration.
- All the 360 series, up to the 75, were microprogrammed to emulate the /75. The /75 was a hardwired machine.
- IBM decided that writing an operating system for this series would be monumental if it were to be written in assembler, so the IBM lab in Hursley, England was given the job of writing a new compiler. Unfortunately, they had never written a compiler before, and it showed. OS/360 was written in assembler, and that showed as well - the Department of Computing Services is currently at the last issue of OS/360 - Release 21.8.
- The Hursley programming language was written anyway, and was commonly referred to as NPL - New Programming Language (See Datamation July 1964). It was eventually released as PL/1, and gave PL/1 a bad name it is still trying to outlive today. IBM has since enhanced PL/1 to give PL/S, in which all systems programs are now written.

The Computing Centre obtained the 360/75 in the late 1960's. At that point in time, the UofW Computing Centre was the largest in Canada. Those of you in the first year COBOL course could ask Professor Graham about the story of who paid for the machine, and how surprised they were when they did it (unconfirmed rumour I heard).

In 1970, the 360 technology was getting rather old, and rumours began to fly that IBM would replace the series. Datamation (June 1970) called it New Series. On June 30, 1970, IBM announced the 370/155 and 370/165. They were described as a small step up from the 360 series, not the hoped-for quantum leap. Eventually, IBM also announced the models 115, 125, 135, and 145. A year after they were announced, IBM made the 155 and 165 obsolete with the announcement of the 158 and 168. IBM then 'discovered' Virtual Storage, and released the appropriate hardware upgrades, with the DOS/VS, VS1, VS2 and VM operating systems. The 135 and 145 were upgraded to the 138 and 148. Some rather fancy networking became available with a spooling system called ASP, which was a stopgap measure until IBM could figure out how to get JES3 working. ASP was a disaster, as were the early versions of JES3.



In early 1974, users became rather upset with System 370. The machines performed well, but the operating systems were adding so much overhead it became impossible to find an unused 360/65 - they were extremely good price/performers. Many shops with heavy CPU usage, low (i.e. non-virtual) memory requirements, and no time-sharing found their throughput increased with the 'old' 360 series.

Up to this point in time, IBM had always had competition from the Plug Compatible Manufacturers (PCM's) in disks, drums, tape drives, terminals, memory - in short, everything but the actual CPU. Gene Amdahl, chief designer for the 360 and 370 series, left IBM to form his own company. Amdahl marketed the 470 V series - plug compatible CPU's. Intel and others also started marketing them, and the war was on. Price slashing, especially on memory, was wearing out the batteries on many accountant's calculators. Datamation has a rather interesting article on the Amdahl 470 in its July 1977 issue.

IBM reacted to this sales pressure in primarily two ways. One was by placing portions of its flagship operating system, MVS, into microcode. The result gave an approximately 14% improvement in throughput, and was called MVS/SE (Systems Extension). The same was applied to VM, which was then called (surprise!) VM/SE. The other reaction to the sales pressure was the announcement of the 370/3033 in early 1977.

This announcement gave the users of the 168-3 (replacing the 168) an IBM machine to upgrade to. There were so many orders on the first day, IBM held a lottery to decide who got which order position. Many companies, including a neighborhood steam laundry, placed an order for a 3033, received a delivery date, and then sold the order position to somebody who needed the machine long before their delivery date. The May 1977 Datamation has a summary of the 3033, comparing it with the Amdahl machine.

IBM also announced the 3031 and 3032, for upgrading the 148 and 158 respectively.

The 303X series offered several advantages over the rest of the 370 line. Wider data paths, memory interleaving, shorter cycle times and fewer configuration constraints were the most obvious. The 3033 is now available in Uni-processor (UP), Attached-processor (AP) and Multi-processor (MP) models. The 3031 and 3032 are offered in UP and AP models. And, of course, software was entirely upward compatible.

otes:

- Datamation went nuts trying to figure out what it all meant. The numbering was all wrong (why 303X, instead of 178?), and the processors shared hardware not usually shared across models (i.e. system consoles were identical stand-alone units for the three machines).
- IBM has announced that the 3033 will be allowed to grow to its full hardware capabilities. For instance, it is possible to get 16 I/O channels, and to get a full 16 megabytes of memory.
- The 303X comes with its channels in two groups of six, and one group of four. Each group of six includes one byte multiplexer, and five block multiplexer, and a device to control the six, called a channel director. It was recently revealed that the channel director is the CPU of an old 158, with new microcode.
- The 3031, which DCS will be getting (see below), comes with a standard six channels, and two meg of memory. This can be expanded to 12 channels, and six meg of memory.
- The 303X series is water-cooled.
- The 360 series was notorious for 'crashing' during electrical storms, because of the sudden voltage surges on the power lines. The 370 series, including the 303X machines, have a rather unique power supply. The line power is used to drive an electrical motor, which directly coupled to a generator, producing power at 415 Hertz, which is both easier to rectify (smaller capacitor banks), and has no power line surges.

In February 1979, IBM announced the 4300 series. This series is supposed to cover the range of computing from the 125 to the 148. The top end of the 4300 line is rumoured to have power comparable to that of a 158. The 4300 supports Virtual Storage, indicating that VM, DOS/VS, VS1 and MVS will all run on it, if the instruction set is 370-compatible. The Computing Centre reference room has not yet received any manuals relating to the 4300, so information is scarce. However, the outstanding feature of the 4300 is the 64K memory chips it uses, giving a meg of memory for \$15,000. This great reduction in cost gives a very high price performance ratio - you get a lot of bang for your buck.

Notes:

- The 360 had two meanings. One said it was a system to give a 'full circle' of performance (why didn't they call it twopi??). The other meaning was that the '3' indicated third-generation hardware, and it was available in the sixties. The 370 series was third generation hardware available in the seventies. The 4300 is fourth generation hardware, with its LSI chips, but why 4 digits (again), and why 4300? It doesn't fit into any pattern with the rest of the four-digit hardware (3031, 3032, 3033 and 8100).

The Procurement

The 360/75 represents a technology which is about 15 years old, and the machine itself is over 10 years old. When IBM had announced the 370 series, the possibility of upgrading to the new CPU's was not seriously considered at UW, because the /75 was relatively new and fully owned, and was giving great performance (over 10,000 debug jobs per day at one point in time). As of late, it is starting to show its age. The machine is starting to wear out. The operating system has most, if not all, bugs removed, but the downtime was rapidly increasing due to hardware faults. The old technology does not lend itself to diagnostics as easily as the newer machines, so these faults were also taking longer to fix. And it was harder to find personnel familiar with the working of the older machine.

DCS has been considering several replacement options. The option chosen will replace the /75 with a 3031 in August 1979. This is a 'slack' period for the Computing Centre, as courses are finished, and most of the users are taking a holiday. The student scheduling is run on a VS1 operating system under VM on the 158, so they (hopefully) will not be affected.

In 1980, the 3031 will be replaced by two 4300's, at less cost to DCS, but giving more power and some very nice backup capability. No mention was made of replacing the 158, so it is probably safe to assume it will be around for some time to come.



Fencing

While negotiating a turn around the corner of the Arts Library nearest to the South Campus Hall, I elected to follow my usual route and walk through the forest of three or four trees that one normally finds there. It is a pleasant escape from reality to be able to be at one with nature for five seconds or so while cutting that corner instead of communing with the asphalt and following the normal path.

HOWEVER, you can't do this anymore! Some artisan has installed a crudely-designed fence there, and about the simplest way to discover this is to nearly impale yourself upon it as I did. Can we no longer walk on the grass around here? What are our tuition dollars going for, anyway? Surely I am not alone in this opinion, as the path through the forest is one of the more well-trodden ones around. Vigourously denounce this latest attempt by Physical Resources to divide the students and keep them from being able to unite against tuition hikes, bus fare increases and the cancelling of Gilligan's Island. The profits of the mining sector increased by, oh at least, easily, several percentage points last year and this is enough to denounce the entire sodded scheme! Let us rise up and demand that our money be diverted from giving tacet support to scab newspapers of the rich imperialist bouer...bueor...boergeoi... aric-stocarts! The students of this university should not be forced to stoop so low as to be required to walk on the paths at all times. Walking on the grass is a needed escape!

steve hayman



Dedicated to Math 230, 2301,
Stat 230/1, and CS240
students

If in STATs you just aim to survive,
Pick the mark you expect, then derive,
That as likelihoods go
It's sufficient to know
Every answer your classmates contrive!

Are exams your main cause of concern?
Drop your worries; stop, listen, and learn:
Keep your head! Don't diverge
On some pivotal urge
Don't "abend" or attempt F-RETURN!

Be exact, since your P's and your queues
May just match with the patterns you
choose;
Treat life's paths like a tree;
What's the point? Can't you see
Why nilpotent and null mathies lose?

An exam is not nearly the END;
Many means by which deviates fend
For their ODEs to success
You could use! Don't regress
Meet the challenge...Your mind will ex-
tend!!

- Ben W. Lutek

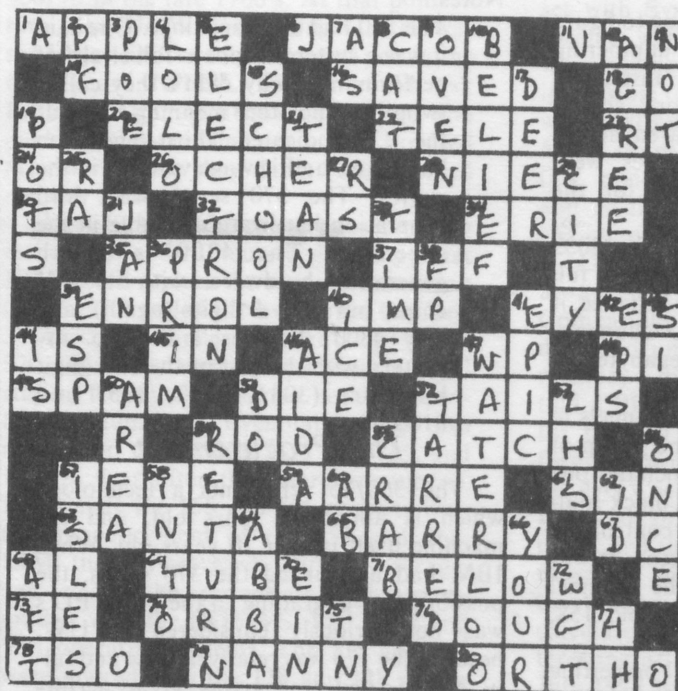
Problem: To Prove That All Odd Integers Are Prime

Mathematician: 1 is prime, 3 is prime, 5 is
prime, 7 is prime, 9 isn't prime. The
Theorem is false.

Engineer: 1 is prime, 3 is prime, 5 is prime,
7 is prime, 9 is prime... The Theorem is
true.

Scientist: 1 is prime, 3 is prime, 5 is prime,
7 is prime, 9 is not prime, 11 is prime...The
Theorem is roughly true, + or - 12 %.

Philosopher: 1 is prime ...hmm... The
Theorem is true.



Volume 19
Number 8
Solution.

Prize Winner
was T. Curry;
no puzzle this
week for the
first time in
a long time.

Masthead: Boy is it ever late! This has been the latest math NEWS of the whole term. We (I) started photonning at about 7 N'clock, after having encouraged all and sundry in the mathSOC office to provide their last article of the term. For, folks, to-morrow is the last day of classes and this is the last mathNEWS of the term. We have produced fewer than the usual tradition, but I think most of them have been pretty fair. I found the experience of beign editor useful and interesting. For tonight, I need to thank Kevin, who proof-read, writers Valerie, jjlong (who takes his leave) ben lutek (who really writes some funny pems), rlbiddle and rmcrook (who wrote far toomuch) doug macinroy (who always comes through with some stuff about sports), tom wojdan, jas mantle (who wrote at length about DCS) and steve. Jeremy was helpful in fixing the photon (we photonned until half past midnight!). Moral support at the end (those present) were robert, kathy (grphics) walter (to whom I am indebted for having done almost all the layout tonight), doug, shy, russ. The editor next term will either be prabhakar, or me, or both, or niether (I realise that exhausts the possibilities.) Goodbye to all our loyal and occasionally bored readers. Good luck on exams and enjoy the summer.

