

# returning in the fall?

## PRE-REGISTRATION NEXT WEEK

Next week, March 11 to March 15, has been designated Pre-registration week. All currently registered undergraduate students intending to enroll in undergraduate programmes for the May, July, September 1974, or January 1975 Sessions must pre-register. The 1974-1975 Academic calendar is now available to aid in course selections.

Some additional pointers to remember: pre-register only once for the Fall/Winter session; students considering attending the Spring term and/or summer school as well as the Fall/Winter session commencing in September must complete two pre-registration forms - one for the Spring and/or Summer, and one form for Fall/Winter; if you wish to change from your current programme, or transfer faculties, complete a pre-registration form for the programme and/or faculty you wish to be enrolled in when you return to campus; students in joint honours programmes must obtain approval of both departments/faculties concerned; co-operative students intending to attend classes for both Fall/Winter terms should select courses for both terms.

What follows is the complete pre-registration schedule for math:

All Regular and Co-operative Mathematics students who plan to continue their studies in the Fall/74 term should pre-register during the week of March 11-15/74 as indicated below.

(1) All students pre-registering for year 2 Regular, 2A Co-op (except for those selecting the Co-op teaching option), 2B Co-op and year 3 of a pass programme should see W. Miller or P. Brillinger at the times listed below. Pre-registrants for 2A of the Co-op teaching option should see R. Dunkley at the times listed in (2) (ii) below.

W. Miller and P. Brillinger:

LIB.102 - Monday through Thursday

9:00 a.m. - 4:00 p.m.

MC.5158A - Friday,

9:00 a.m. - 1:00 p.m.

(2) All students pre-registering for years 3 and 4 (Regular and Co-op) of an honours or general programme should register with the appropriate Undergraduate officer:

(SCHEDULE, cont'd on next page)

ISSUE 4.7

FRIDAY, MARCH 8, 1974

# math NEWS

## RENÉ'S LIST

The following information was received this week by mathNEWS from K.D. Hunt, Secretary of the René Descartes Foundation.

"In recognition of excellent achievement in Mathematics, prizes of \$100 or \$50, dependent upon overall average for the year, are to be awarded by the René Descartes Foundation to the undernamed undergraduate students.

R.M.H. Dunn

S.J. Kusnir

B.E. MacCallum

J.G. Morris

M.E. Surtees

W.K. Taylor

A. Tsonis

The awards are to be presented during the Winter 1974 Meeting of the Foundation scheduled for March 7, 1974 commencing at 8:00 p.m. in room M.C. 5158.

Professor P.L. Hammer of the Department of Combinatorics and Optimization will address the meeting. His talk entitled "Discrete Optimization" is to be followed by light refreshments in the Mathematics Faculty Lounge. All René Descartes Scholars, Fellows and Prize Winners, past and present, are invited to attend".

## FED REPS

In the event that anyone missed the results of last week's Student's Council Elections the three successful candidates were Cindy Harris, Janice Halligan, and J. J. Long.

## ELSEWHEN

Fragments from mathNEWS' files, Friday, March 9, 1973, one year ago this week: "...next week: Pre-registration rino-off..."; "...the Reg Math hockey dynasty carved a niche in the annals of intramural ranks at the University of Waterloo this week with an unprecedented fourth consecutive championship..."; "...it's been a good week for terminal diseases, Honeywell operators and other annoying gremlins that grow in cracks and crevices of a terminal system..."; "...math rep raps: what the federation does is irrelevant to most math students..."

(SCHEDULE, cont'd from previous page)

(i) Co-op Chartered Accountancy & Business Administration Options

J. D. Kalbfleisch - MC.5092A  
1:00 - 4:00 p.m. Tues. March 12  
1:00 - 4:00 p.m. Wed. March 13

(ii) Co-op Teaching Option

R. G. Dunklev - MC.5103  
10:00 a.m. - 12:00 noon Tues March 12  
10:00 a.m. - 12:00 noon Wed. March 13

(iii) Applied Analysis & Computer Science

V. A. Dyck - LIP.102  
9:00 - 12:00 noon Wed. March 13  
1:00 - 4:00 p.m. Wed. March 13

(iv) Applied Mathematics

M. E. Snyder - MC.5007  
1:00 - 3:00 p.m. Mon. March 11  
1:00 - 4:00 p.m. Tue. March 12  
9:30 - 12:00 noon Wed. March 13  
1:30 - 4:30 p.m. Wed. March 13  
9:00 - 12:00 p.m. Fri. March 15  
1:30 - 4:30 p.m. Fri. March 15

(v) Combinatorics & Optimization

R. Burns - MC.6133  
1:30 - 3:30 p.m. Mon. March 11  
1:30 - 3:30 p.m. Thu. March 14

(vi) Statistics (and Actuarial Science)

C. Springer - MC.5039  
9:30 - 11:00 a.m. Tue. March 12  
9:30 - 11:00 a.m. Wed. March 13  
2:30 - 4:00 p.m. Thu. March 14  
3:30 - 4:30 p.m. Fri. March 15

(vii) Actuarial Sciences (and Statistics)

J. A. Bennett - MC.5036  
1:30 - 4:30 p.m. Tue. March 12  
9:30 - 12:00 noon Thu. March 14  
9:30 - 12:00 noon Fri. March 15

(viii) Pure Mathematics

D. Higgs - MC.5084  
11:30 - 2:30 p.m. Tue. March 12  
3:30 - 5:30 p.m. Tue. March 12  
1:30 - 5:30 p.m. Wed. March 13  
1:00 - 2:30 p.m. Thu. March 14  
3:30 - 5:30 p.m. Thu. March 14  
A. Kerr-Lawson - MC.5066  
9:30 - 11:30 a.m. Tue. March 12  
9:30 - 1:30 p.m. Wed. March 13  
9:30 - 12:00 noon Thu. March 14

## NON-CREDIT

The following Computing Centre non-fee, non-credit courses will begin next week. To register, please contact Ms Andrea Dietrich, the User Services Secretary, in mc 2008 or ext. 3271.

SIMSRIPT (1.5 hours)

SIMSRIPT II is a discrete-event simulation language which is also suited to general programming problems. The seminar will be a discussion of the simulation concepts of SIMSRIPT, using the programming example of a bank teller line-up.

(continued)

GPSS (1.5 hours)

GPSS (General Purpose Simulation System) allows the simulation of systems which are queue-processing in nature. These systems typically involve discrete entities which, as they move through the system, impose demands upon the system, and consequently affect the movement of other entities in the system.

The seminar will cover an introduction to GPSS with emphasis on concepts of simulation rather than on details of the language. Previous programming experience is not necessary for the GPSS seminar; however, an understanding of the fundamentals of some programming language would be beneficial.

GPSS and SIMSCRIPT can usually be employed to solve similar problems. People contemplating simulation might be interested in attending both to discover the relative merits of each.

## FORTY?

J.J. Simpson did it, Phil Esposito did it, Thomas More did it, Mr. Miller did it...

Greg Horndeski does it!!

Cookie Math Prof, Greg Horndeski, two weeks ago broke a monumental modern day record set by our own Mr. Miller (as legend has it), back in 1903, of 27 chalk-written blackboards in one 50-minute lecture. He smashed the record with a remarkable pace of a board every 1 min., 20 sec.

Final count: Miller - 27 ; Horndeski - 33.

Many have fallen by the wayside suffering from severe writer's cramp and acute verbal diarrhea. Greg Horndeski immediately inquired if #28 could possibly be removed, electro-plated and enshrined in MC 5010. Interviewed afterwards 'Horny' said, "thank-ye, thank-ye, just one more core-a-larry."

Mr. Miller protested the curvature of the chalk, which was immediately dispatched to Lloyds of London for inspection. When asked to comment he said, "What do you want? Can't you see I'm growing old!"

If that wasn't enough, Feb. 13, 1974, may be Horndeski's claim to everlasting fame. As known by every scholar, Sir Thomas Mores's (one of the greatest schoolmen) record of 30 boards was heralded since antiquity. By 9:50 it became obvious that even this record was in danger of Horndeski's writing prowess. At 10:10 fatigue started to set in, but at 10:16 with 33 boards covered, a last-minute rush of adrenalin and the roar of the class - "The juice is loose", inspired one more corollary with proof.

End result: Horndeski - 37 ; More - 30  
'Juice' broke 2000,

'Espo' broke 150,

Can 'Horny' break 40?????????

Only time will tell! (Leroy Dickey even offered to rent his oversized eraser, for a nominal matrix, to crash the 40 plateau).

Bunjakowski - Schwartz - Weierstrass

# CANUSA

At the Tuesday Math Society meeting, council turned thumbs down to a request by the 85% Canadian Quota Campaign for funds. Noting that Mathsoc has officially endorsed the aims of the 85% Campaign, Howard MacIntosh and national chairman Peter Havers were seeking a donation for \$50. The money was to be used to help fund a program designed to prosecute foreign professors who have been abusing a Canadian tax treaty.

Apparently the Canadian government has reciprocal agreements with other countries by which professors are allowed to come and teach in Canadian universities for up to two years without having to pay income tax to Canada.

The 85% Quota Campaigners claimed that several foreign, mostly American, professors have taken advantage of this law and, by seeking landed immigrant status in Canada, have used the two year period as a tax holiday. Havers claimed that several Ontario universities have been surveyed and that over 1000 non-Canadians have taken advantage of the tax treaty.

After a lengthy discussion members voted 8 to 1 against financial support for the venture.

Jim Parry, president of the Computer Science Club approached council with a proposal whereby that club would be granted a \$100 per term budget. The club, now boasting 182 members was granted \$100 for the summer term and council recommended that future councils consider allotting the requested \$100 per term budget.

In other money matters, council voted to allot up to \$75 for a private mathsoc party to be held next Friday, March 15.

The remainder of the meeting centered around a lengthy list of corrections for the new constitution. A referendum concerning the revised constitution may soon be held.

## Footnotes:

-resignations were received from second year regular rep Pat McGrath and treasurer Rosemary van den Akker.

-a math society honorary membership for night security guard Earl Bowman is to be considered at the next meeting.

# WARNING

This is a warning that, beginning next Monday and continuing for two weeks, anti-calendar questionnaires will be distributed in all classes.

"It is a safe rule to apply that, when a mathematical or philosophical author writes with a misty profundity, he is talking nonsense."

-A.N. Whitehead (1911)

# MATHSOC ELECTIONS

This year's general elections for the Mathematics Society Council are being held Wednesday and Thursday, March 13 and 14. Following are the positions available and the candidates seeking them:

President:  
Jim Langer  
(acclaimed)

Vice President:  
Randall Arsenault,  
Phil Lanouette.

Two 2A Co-op Reps:  
Mary Ann Mikkelsen,  
Debbie Wilson.  
(acclaimed)

One 2B Co-op Rep:  
Craig Honey,  
Brad St. Pierre,  
Robert A. G. White,  
Robert J. White (mnl).

Three 2nd Year Reg Rep:  
John Long,  
Patricia Meredith.  
(acclaimed)  
One seat vacant.

One 3B Co-op Rep:  
Judy Hart,  
Steve Martinello.

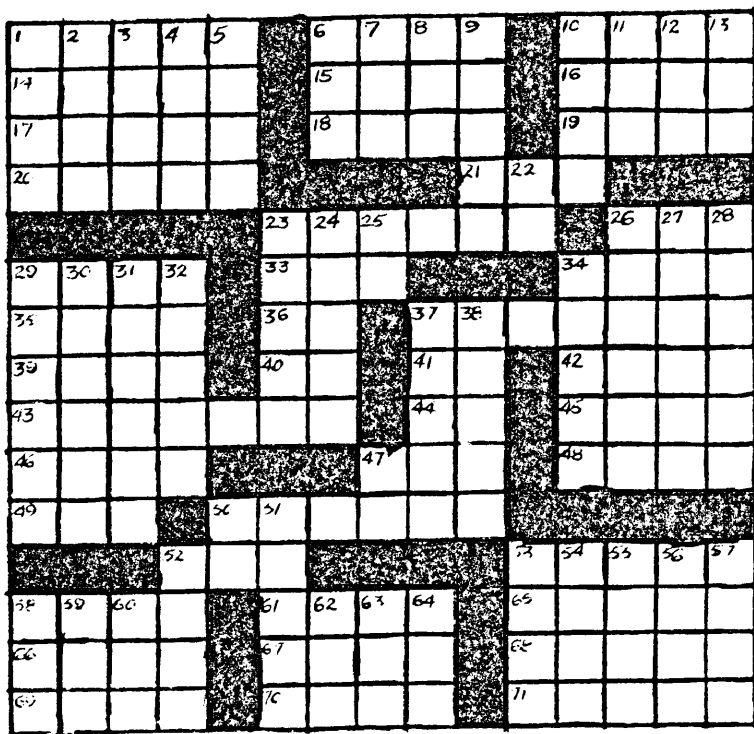
Three 3rd Year Reg Reps:  
Joe Carpenter,  
George Carzanowski,  
Wally Romansky.  
(acclaimed)

Three 4th Year Reg Reps:  
Lloyd Dunham,  
Karen Kimmerly,  
Janet Martin,  
Bruce Woodrow.

Each student may vote for Vice-President and for the candidates in his/her constituency--barring acclamations. (Note, that 3rd year Regular and 3B Co-op students vote for 4th year regular candidates.)

"In my opinion a mathematician, in so far as he is a mathematician, need not preoccupy himself with philosophy - an opinion, moreover, which has been expressed by many philosophers."  
-Henri Lebesgue (1936)

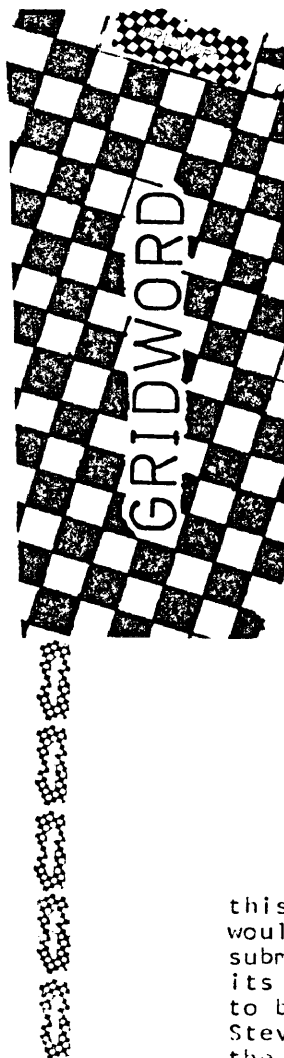
"Mathematics is the most exact science, and its conclusions are capable of absolute proof. But this is so only because mathematics does not attempt to draw absolute conclusions. All mathematical truths are relative, conditional."  
-Charles Proteus Steinmetz (1923)



name -----

### across

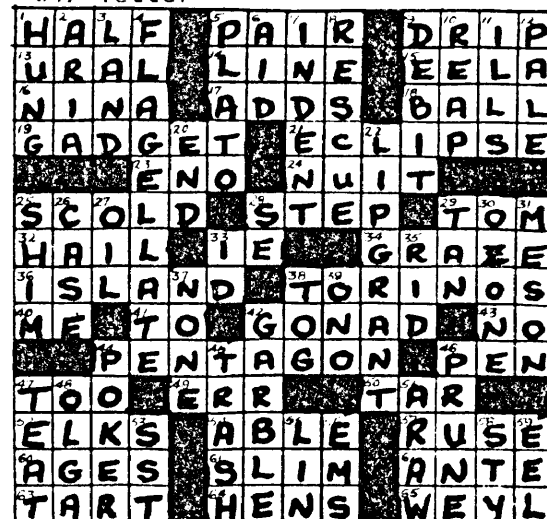
- 1/ astonished
- 6/ incite into wrongdoing
- 10/ "Godfather" actor
- 14/ less mad
- 15/ Caesar's city
- 16/ French greeting
- 17/ perceives
- 18/ British raincoat
- 19/ precipitation
- 20/ crème de la crème
- 21/ dine
- 23/ harelike animal
- 26/ before
- 29/ stash away
- 33/ card
- 34/ thought
- 35/ a French city
- 36/ two (pref)
- 37/ ghosts
- 39/ less than twice
- 40/ that is
- 41/ Hollywood Legion (abbr)
- 42/ state (fr)
- 43/ lady's bedroom
- 44/ poet Cummings' initials
- 45/ Alaskan city
- 46/ Paris airport
- 47/ meadow
- 48/ ending for "murd"
- 49/ allow
- 50/ Alberta team
- 52/ sea eagle
- 53/ Math students gather here
- 53/ footnote word
- 61/ naked
- 65/ coral island
- 66/ inert gas
- 67/ terminations
- 68/ silly
- 69/ actor Williams
- 70/ rodents
- 71/ the Devil



This week's contributor is Alge Borusas.

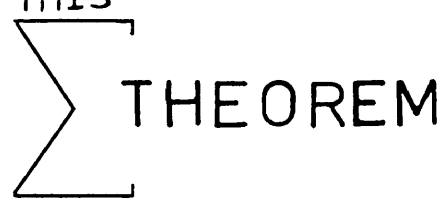
### down

- 1/ tennis player
- 2/ a Scotsman
- 3/ Allied North American Investments (abbr)
- 4/ impudent or bold
- 5/ Gaelic
- 6/ limb
- 7/ snake
- 8/ Electronic Machinery Corporation (abbr)
- 9/ Star Trek actor
- 10/ vehicle
- 11/ in the style of
- 12/ he beat Frazier
- 13/ negative prefix
- 22/ preposition
- 23/ half diameters
- 24/ sharper (lat)
- 25/ exist
- 26/ newspaper boss
- 27/ domesticate again
- 28/ eggs or bunny
- 29/ wintry computer language
- 30/ stannum in the rough (2 wds)
- 31/ the hidden
- 32/ covered with dandelions
- 34/ girl's name
- 37/ transparent
- 38/ begs
- 47/ French article
- 50/ either
- 51/ not outer
- 52/ feminine name
- 53/ platform
- 54/ volcano in Europe
- 55/ vessel
- 56/ forearm bone
- 57/ dale
- 58/ business abbreviation
- 59/ she plays Maude
- 60/ charged particle
- 62/ Miss Merkel
- 63/ type of poison
- 64/ letter



Sixty-six solutions were submitted this time of which only 38 were correct and wouldn't you know it, the messiest solution submitted was one of the correct ones and its submitter won the random draw so it had to be checked again. Congratulations to Steven Sch\_\_t ( I can't figure out what the other letters are. Try to be neater next time!)

**Gridword Contest:** Again this week mathNEWS is awarding 2 free math T-shirts as prizes in our gridword contest. The first T-shirt goes to the creator of this week's gridword. The second will go to the person whose entry is selected in a random draw from all correct solutions received. To enter, have your completed gridword in the mathNEWS file in M+C 3038 by 3:30 pm, next Tuesday. Include your name and telephone number. Winners claim your prizes in M+C 3038 and have your name crossed off the winners' list.

THIS  
  
 WEEK'S

This article is reprinted from the March, 1974 Chem 13 News, who reprinted it from the 1958 issue of The Percolater. It was referred to mathNEWS by Matthew Smith. -- thanx

A continually recurring problem in organizations such as ours, which are engaged in scientific research is the introduction of new members of the staff to the proper technique of writing technical papers. Such papers must be complete and clear to the readers as well as conform to the basic precepts of scientific report writing. Although the scope of the subject is broad, we will just consider a few points relative to the use of the notations of mathematics, based upon the author's experience in researching the literature of chemistry, physics and engineering.

Perhaps the first principle that the new engineer or mathematician must bear in mind is that it is never considered in good taste to designate the sum of two quantities in the form:

$$1 + 1 = 2 \quad (I)$$

Anyone who has made a study of advanced mathematics is, of course, aware that:

$$1 = \ln e$$

and that:

$$1 = \sin^2 x + \cos^2 x$$

Further:

$$2 = \sum_{n=0}^{\infty} \frac{1}{2^n}$$

Therefore, equation (I) can be expressed more scientifically in the form:

$$\ln e + (\sin^2 x + \cos^2 x) = \sum_{n=0}^{\infty} \frac{1}{2^n} \quad (II)$$

This may be further simplified by the use of the relations:

$$1 = \cosh y \cdot \sqrt{1 - \tanh^2 y}$$

and

$$e = \lim_{z \rightarrow \infty} \left(1 + \frac{1}{z}\right)^z$$

Equation (II) may therefore be rewritten:

$$\ln \left( \lim_{z \rightarrow \infty} \left(1 + \frac{1}{z}\right)^z \right) + (\sin^2 x + \cos^2 x) = \sum_{n=0}^{\infty} \frac{\cosh y \cdot \sqrt{1 - \tanh^2 y}}{2^n}$$

or:

$$\ln \left( \lim_{z \rightarrow \infty} \left(1 + \frac{1}{z}\right)^z \right) + (\sin^2 x + \cos^2 x) - \sum_{n=0}^{\infty} \frac{\cosh y \cdot \sqrt{1 - \tanh^2 y}}{2^n} = 0$$

At this point, it should be obvious to even the casual glance that equation (IV) is much clearer and more easily understood than equation (I). Of course, there are various methods which could have been used to clarify equation (I), but these should become obvious once the reader has grasped the underlying principle.

## IT'S BEEN SAID

"Mathematics is the tool specially suited for dealing with abstract concepts of any kind and there is no limit to its power in this field. For this reason a book on the new physics, if not purely descriptive of experimental work, must be essentially mathematical."

-P.A.M. Dirac ('Quantum Mechanics', 1930)

"The Great Architect of the Universe now begins to appear as a pure mathematician."

-J.H. Jeans ('The Mysterious Universe', 1930)

"To create a healthy philosophy you should renounce metaphysics but be a good mathematician."

-Bertrand Russell (1935)

"The science of Pure Mathematics, in its modern developments, may claim to be the most original creation of the human spirit."

-A.N. Whitehead

(Science and the Modern World, 1925)

# math ETICS

## CAP'N CRUNCH'S NAVY SINKS SEA HORSES

It was 8:30, the Sea Horses arrived at the pool. There were their arch enemies, Cap'n Crunch's Navy. This was it, the game which would decide who went to the tournament on Saturday March 9. The Sea Horses were struck with fear, where was their third girl? ("you must have 3 girls in the water at all times" - the ref.) A frantic search of the locker room turned up not one single prospect, not even a married one could be found. The ref was kind enough not to default the dejected Sea Horses, though... "we'll let you play with a woman disadvantage"

There they were, 7 Sea Horses against 8 C.C. Navy. Could they do it?? They were certainly going to give it a try. It took the defence a few goals to get organized, but once they did, there was no getting around them. (almost) We scored. They scored, we scored, they scored, and so it went.

Despite a valiant effort, Cap'n Crunch's Navy won, 10 - 6.. (all for the want of one more girl)

Out of the pool, someone asked if this meant we couldn't play in the Tournament. That's exactly what it meant -- but wait, it seems the Mathies (who made it to the Tourney) need more players. Would the Sea Horses care to merge with them? Would we?? Could we?

So, all is not lost, part (most) of the Sea Horses will be in the Tournament on Sat Mar 9.

The games start at 12:00 noon, so why not come out and see what it's all about? You never know, you just might get interested (heaven forbid) and decide to come out for a team next year (double heaven forbid)

Anyway, a big THANK YOU to everyone who did show up... Rick A., Ken, Bruce W., Rick B., J. J., Hans (see you in a year), Karen, and the guy in the striped hat, whose name I don't know. Also, the team would like to thank Rick Atalla, for the design for the team shirts.

See you on Saturday team.

## 'BUN

## SEMINARS

## C&O

Wes Graham, professor of computer science here, will give a seminar on "Distributed processing - an alternate to >>debu<< blues". Thursday, March 7 1974 at 10:30 in MC 3006.  
Refreshments. Everyone welcome.

To fulfill a need of the Honeywell user community, the CSC intends to hold a series of seminars on the 'Bun regularly each term. We are holding an experimental session during March. The seminars will be in MC 3013, at 09:30 or 14:30, each meeting lasting 1 hour. The following seminars will be offered:

- |                      |       |                |    |
|----------------------|-------|----------------|----|
| 1. Intro to the 'Bun | 2 hrs | Mar 11, 13     | AM |
| 2. Useful subsystems | 1 hr  | Mar 15         | AM |
| 3. Gmap              | 3 hrs | Mar 11, 13, 15 | PM |
| 4. Control cards     | 1 hr  | Mar 18         | AM |
| 5. Fortran           | 1 hr  | Mar 20         | AM |
| 6. Algol             | 1 hr  | Mar 22         | AM |
| 7. Gcos design       | 3 hrs | Mar 18, 20, 22 | PM |
| 8. Tss design        | 3 hrs | Mar 25, 27, 29 | AM |
| 9. Qed - vmxpl       | 3 hrs | Mar 25, 27, 29 | PM |

Enrollment will be limited to 15 for each seminar. Register with Jim Parry in MC 3013.

Professor Klaus Ritter  
University of Stuttgart

Will present a series of seminars on:

"Superlinearly Convergent Methods for Constrained And Unconstrained Minimization Problems"

DATES	ROOM	TIME
Monday, March 11	MC 5158	3:30-4:30 PM
Wednesday, March 20	MC 3052	11:30-12:30 PM
Monday, March 23	MC 5158	3:30-4:30 PM

"A mathematical truth is neither simple nor complicated it itself, it is."  
-Emile Lemoine

"I have heard myself accused of being an opponent, an enemy of mathematics, which no one can value more highly than I, for it accomplishes the very thing whose achievement has been denied me."  
- Goethe

# BRIDGE COLLAPSES

It appears that the only way to get news from around the Math building is to go out and get it yourself. Consequently I will take little or no responsibility for misrepresentation. (Apologies to P.J.P.) News from all the departments are always welcome and indeed desired, so keep those cards and letters coming in. Thanx. By the way I got an interesting one from the Stats Club who want something written on them, so here it comes.

Today's subject is Bridge Freaks, sometimes known as Probability & Stats majors. A Bridge Freak is a strange and irrational creature. Famous for such quotes as "I really didn't want to go to that class anyway." , "Why didn't you try the heart finesse?!" , "Well,... just one more hand." , "Obviously, they didn't split 4-4," or the classic, "Down one is good bridge." (Does this apply to beer, too?). Although a Bridge Freak deems him/herself a master of logic and rational thought, a few simple tests will prove otherwise.

1) Walk up to someone sleeping in the Math lounge (after a hard night of Duplicate) and whisper softly, "a fourth?". If he's still there, then he/she's not a Bridge Freak.

2) Walk by a bridge game, look knowingly at the dummy, i.e. the hand laid down on the table ( in France it's known as 'le mort') and the declarer's hand (opposite the dummy) and with great emphasis and a small sneer and in a despairing tone of voice say, "What kind of contract is that? A club switch tears it to pieces!" As you turn away you'll be followed by alternate groans of deep despair and exclamations of disbelief but never fear you probably know as much about a club switch as they do.

3) But the clincher to really rattle the amateur who has played enough to think he knows something, is to hit him where it hurts most. Ask him, "What system do you play?" After he/she answers, discreetly apologize and walk away slowly, shaking your head. Incidentally you just punctured his ego.

Actually Bridge Freaks aren't all bad, after all it is a harmless game to pass the time, (Warning -don't play for more than a tenth a point) and it does afford an opportunity for people who have dropped out, an alternative to working. Plus, and this is the most important fact, it does offer those Probability & Stats majors, a chance to use their education.

There is one other facet of Bridge Freaks I have carefully ignored, i.e. the group of people known as Kibitzers who gather around the bridge games making inane remarks on the bidding and play. Never have I subscribed to the view that Kibitzers should be seen and not heard. Why should they be seen? (sorry M-K!)

Next week.... how Ribbit expands to challenge the Bridge Freaks. See you then!!

# unCLASSIFIED

FOR SALE: Calculator, Bowmar Digimatic M-3 with memory. Includes adapter/charger, vinyl case, instructions. In perfect condition - \$125. Phone 743-9595 and ask for Stan.

FOR SALE: Dual 1218 turntable complete with table and dustcover and brand new Shure M91ED magnetic cartridge. Lenco dampened cueing system. Just recently, completely readjusted (anti-skating and balancing). Asking \$225 or best offer. Phone 884-7063. Ask for Al. (Bills as proof).

FOR SALE: Candles in Circle K office, M&C 3040, right beside MathSoc. Very good scented candles, excellent prices.

TO SUBLET: Furnished apartment in London for summer term, May - Sept. 1 on corner of Richmond & Oxford. One large bedroom, air conditioning. Call Grant at 742-9702 for further information.

TO SUBLET: Apt., summer '74. Waterloo Towers, just off campus. Call 884-9453. Reasonable rates.

TO SUBLET: Townhouse, May to Aug., 3 bedroom, 1 1/2 bath. Partially furnished (living & dining room, etc.). Sunnydale Pk, \$200/mth, 884-9471. Will rent individually.

FOR SALE: 1970 Honda CB-175. Very good condition. For more information call Eric 884-8924 (between 4:00 and 6:00 p.m.)

WANTED: Tutor for review of Math 217 and Math 219. Phone 579-4665.

FOR RENT: 2 bedroom unfurnished apartment in married student division of Co-op. Available May 1st at \$145 per month. Phone 884-8657 or U of M ext. 2192.

NOTICE: Watson: Holmes, I never asked before but what level of schooling did you need to become such a brilliant detective?? Holmes: Elementary, my dear Watson.

Sorry about the old attempt at humour but people shouldn't miss the Sherlock Holmes movies (circa 1943) that are being shown on T.V. Wednesday nights at 12:00. That is pretty close to midnight but they are classics. E.S.

NOTICE: Paralegal Assistance offers free non-professional legal advice. Drop into room C.C. 106 or phone 885-0840, Mon., Thurs. 7-10 pm. Tues., Wed 2-5 pm.

BIRTHDAY: Belated greetings to Anu, 3B co-op; a youthful 62 last Friday (Mar. 1). From Dave, Andy, and various members of 3BEE.

A VERY happy birthday to Liza from Liz and Barb.

AN EXTREMELY happy birthday to Jean from Liz and Barb.



# WALBOL

or  
(because it was originated  
at this university)  
WATEVERFOR, or  
SNOJOB

All presently available programming languages have one major shortcoming, namely, their "Computer-jargon" orientation. We choose, as an example of this, COBOL with its highly technical terminology. i.e.

"MOVE DATA-AREA-1 TO DATA-AREA-2." This was the motivation for creating WALBOL. WALBOL is a block structured programming language similar to ALGOL and COBOL. The difference lies in the fact that WALBOL is much more readable than either of these.

## 1) NUMERICAL CONSTANTS.

Programmers have often complained that in presently available languages numerical constants are too difficult or "mathematical" to understand. i.e. fortran "E" notation .12000000E 01 can be very confusing, so WALBOL has done away with numbers entirely. Below are examples of WALBOL numerical constants:

```
THREE
TWENTY-FIVE
SEVEN POINT FIVE (or alternately)
SEVEN AND ONE HALF
POINT THREE ONE FOUR ONE FIVE NINE
WITH THE DECIMAL POINT MOVED THREE PLACES
TO THE RIGHT.
```

## 2) STATEMENT LABELS.

All statements have a beginning and end of statement delimiter to avoid confusion which sometimes arises between statements. The beginning of each statement is denoted by a numerical constant. These are sequential and start at ONE. The end of statement delimiter is "END OF STATEMENT" <number> where <number> represents the beginning of statement delimiter for that statement. i.e.

```
THIRTY-THREE <statement> END OF STATEMENT
THIRTY-THREE. (the period being optional).
(note: "END OF STATEMENT" is a reserved
word in WALBOL)
```

## 3) IDENTIFIERS.

WALBOL identifiers are similar to those of most other languages with the exception of FORTRAN. Ansi FORTRAN does not allow for variable and subprogram names longer than six characters. WALBOL on the other hand, requires a minimum length of six characters for each identifier. Lazy programmers might be tempted to use something like "AAAAAA" in WALBOL to replace "A", however the WALBOL compiler will detect this and print out the warning "UNIMAGINATIVE VARIABLE NAME" at each occurrence of the identifier.

## 4) INSTRUCTION SET.

WALBOL contains a wide and varied set of commands.

a) COMMENT STATEMENTS. Comment statements (being the most important part of any programming language) naturally, have an important place in WALBOL. Documentation

is delimited as follows:

"THIS IS A COMMENT STATEMENT" followed by the necessary documentation. (note: As with identifiers there is a limit to the minimum size of comments. It is 100 characters. Also there must be at least as many comments as source statements to insure proper documentation or else the program will not execute.)

(another note: "THIS IS A COMMENT STATEMENT" is a reserved word.)

## b) DECLARATIONS.

There is one declaration statement in WALBOL. It has the form:

```
DECLARE <variable> TO BE <type>,
<variable> TO BE <type>, ..., AND <variable>
TO BE <type> where examples of <type>
follow:
```

```
THREE DIGIT INTEGER
SEVENTEEN CHARACTER STRING, and so on.
```

## c) EXPRESSIONS

The five basic FORTRAN operators are +, -, \*, /, \*\*. The corresponding WALBOL operators are:

```
<variable> PLUS <variable>
<variable> MINUS <variable>
<variable> MULTIPLIED BY <variable>
<variable> DIVIDED BY <variable>
<variable> RAISED TO THE POWER <variable>
```

## d) ASSIGNMENT STATEMENTS.

Assignment is accomplished by the "IS ASSIGNED THE VALUE (OF)" keyword. i.e.

```
"X VALUE IS ASSIGNED THE VALUE
SEVENTY-THREE"
"VARIABLE TWO IS ASSIGNED THE VALUE
OF VARIABLE ONE PLUS X VALUE"
```

## e) INPUT AND OUTPUT.

Even though WALBOL has only been around a few days, it has already received wide acclaim for its effectiveness with input and output. The WALBOL input and output keywords are "BRING IN" and "PUT OUT" respectively. Since free formatting is difficult and time consuming all BRING IN and PUT OUT statements must be formatted. A correct output statement in WALBOL would be for example:

```
TWENTY-SEVEN PUT OUT THE CAT, AND THE DOG
USING FORMAT NUMBER SIXTEEN END OF
STATEMENT TWENTY-SEVEN. where "THE CAT"
and "THE DOG" are the output variables.
```

Format statements have five components. These are integer formats, real formats, character formats, blanks, and strings.

INTEGER FORMATS: These are in the form "<>number of integers><number of digits>-DIGIT INTEGER" For example: THREE FOUR-DIGIT INTEGER. This is equivalent to FORTRAN's 3I4 (now that's confusing)

REAL FORMATS: These are similar and are of the form:

```
"<number of reals><number of digits before
the decimal point>POINT<number of digits
after>"
```

CHARACTER FORMATS: "<number of strings><number of characters>-CHARACTER STRING"

BLANKS: "<number of blanks> BLANK"  
STRINGS: Strings are set apart by the WALBOL keywords "STRING" and "END OF

(WALBOL, cont'd on next page)



(WALBOL, cont'd from previous page)  
STRING"

So, for example of input and output:

```

START THE MAIN PROGRAM
ONE AAAAAAB IS ASSIGNED THE VALUE SIXTEEN
POINT ONE END OF STATEMENT ONE
TWO BBBBBC IS ASSIGNED THE VALUE FOUR END
OF STATEMENT TWO
THREE CBCRADIO IS ASSIGNED THE VALUE ZERO
END OF STATEMENT THREE
FOUR BRING IN UNCLE CHARLIE, AND HIS SON
USING FORMAT NUMBER TWELVE END OF STATEMENT
FOUR
FIVE FORMAT NUMBER TWELVE SIX-DIGIT
INTEGER, TWO BLANK, FIVE-CHARACTER STRING
END OF STATEMENT FIVE
SIX PUT OUT AAAAAAB, BBBBBC, CBCRADIO,
UNCLE CHARLIE, AND HIS SON USING FORMAT
NUMBER THIRTY-TWO END OF STATEMENT SIX
SEVEN FORMAT NUMBER THIRTY-TWO TWO POINT
TWO, SIX-DIGIT INTEGER, STRING WALBOL IS
GREAT END OF STRING, ONE-DIGIT INTEGER,
THREE BLANK, SIX DIGIT-INTEGER, FIVE-
CHARACTER STRING END OF STATEMENT SEVEN
EIGHT STOP EXECUTING THE PROGRAM END OF
STATEMENT EIGHT
END OF THE MAIN PROGRAM.
$ENTRY
THREE HUNDRED AND ONE HENRY
.....
OUTPUT
SIXTEEN POINT ONE FOUR WALBOL IS
GREAT ZERO THREE HUNDRED AND ONEHENRY
EXECUTE TIME: TWO POINT FIVE SECONDS
COMPILE TIME: TWENTY-THREE SECONDS.

```

(final note: In spite of the fact that WALBOL has been in existence for such a short time, a comprehensive list of WALBOL keywords has already been compiled. It is presently available in the bookstore under the title "Weoster's Dictionary".)

Any questions and/or problems should be referred to: Richard Devitt MC 3002, or Gerry Suggitt MC 3075.

(or phone ext. 2391)(special thanks to S.D.)

## MATHIES HAVE NO TASTE

Can you remember way back, about two weeks ago, when we had our last issue and we had a Palate Contest? I can. After spending six bleary-eyed hours pouring over entries, I have come to the conclusion that Mathies have no taste. Not one single entry was correct. Still, because we have already bought the prize, and none of us working on the paper tonight is a Hebrew Scholar, and because the bookstore won't take it back, we are going to award a Loser's Prize. We dumped the two boxes of replies on the floor and the first one that we saw that was done in red ink was the Loser. We proudly announce that Mike Ruwald is the Official Loser Winner. Just in case you wonder, the correct answers are: 1. peanut butter and jelly 2. vanilla 3. pistachio 4. sarsaparilla and there was no tutti-frutti. Maybe the next contest will be easier.

## HOW LOW CAN YOU GO?

Spring is approaching and its time to start thinking about income tax and, of course, deductions.

One of the most important deductions for a student is tuition fees. The following are some important facts about tuition fees.

(1) Only the student can claim them as a deduction. So regardless of who paid your tuition only you can claim those fees as a deduction.

(2) Receipts must be provided to back your claim. If you can't find your receipts, Financial Services will gladly provide you with copies (at \$2.00 per copy).

(3) The money you pay to U of W at the start of each term is not all deductible. In Co-op Math, for example, out of approx. \$400, only \$372.70 is deductible. So look carefully at your receipt before filing in your tax form.

(4) You may claim tuition fees for any period of 12 months or less provided that the period begins in the taxation year. In other words, for the 1973 income tax return, you will be unable to claim any tuition fees which cover a period before January 1, 1973. The above rule can be used by co-op students to help level out their income by pairing each work term with an academic term.

For example, if you had two work terms in 1973 you can pair one of the workterms with the summer academic term. But how do you pair off the other work term? Simple. You use the present winter term. In other words you deduct tuition fees for a 12 month period beginning in May 1973.

Consult the charts with article for further information on the best way for you to use pairing.

(5) Tuition fees can be deducted only once. For some reason the federal government frowns on attempts to deduct the same tuition fees twice.

So much for tuition fees. Next week I will attempt to deal with the ONTARIO TAX CREDIT.

YEAR 0	YEAR 1		YEAR 2		YEAR 3		YEAR 4		YEAR 5	
S	F	W	S	F	W	S	F	W	S	F
1	1	2	2	3	3	4	4			
A	B	A	B	A	B	A	B			
TAX YEAR 0	TAX YEAR 1		TAX YEAR 2		TAX YEAR 3		TAX YEAR 4		TAX YEAR 5	

YEAR 0	YEAR 1		YEAR 2		YEAR 3		YEAR 4		YEAR 5	
S	F	W	S	F	W	S	F	W	S	F
1	1	2	2	3	3	4	4			
A	B	A	B	A	B	A	B			
TAX YEAR 0	TAX YEAR 1		TAX YEAR 2		TAX YEAR 3		TAX YEAR 4		TAX YEAR 5	

"The infinite! No other question has ever moved so profoundly the spirit of man."  
-David Hilbert (1921)

## FEEDBACK

(Note: Letters appearing in this column represent the opinions of our readers. mathNEWS welcomes your criticisms, comments, suggestions, etc. All letters should be signed, but, if requested, a pen name will be used. Submit your feedback to MC 3038 and have someone there deposit it in the mathNEWS file. Or, drop your letters in the campus mail (a free service) addressed to: mathNEWS, MC 3038. Weekly deadline for submissions: TUESDAY 4:30pm.)

## filler rebuttal

mathNEWS:

Karl Weierstrass's words of wisdom about a poet last week did not rhyme. I will never use the Weierstrass method again-he speaks with forked tongue.

"Adam Smith"

66.6666666666666666%

mathNEWS:

I would like to say that when I was doing an assignment on Debug recently the turnaround was at best a very reasonable 2 minutes and at worst an almost reasonable 10 minutes -- this occurring when the ribbon on one printer was being changed and the other printer was, for no visible reason, not in use.

Also, I agree in various degrees with all four of the science faculty council's rebuttals to the math faculty council's suggestions as outlined in (ugh) last week's BARD; but I think the two counterproposals are worse than math faculty's scheme.

Oh well, four out of six isn't bad...

Mark Brader  
72040281

## prof. prompts pain

mathNEWS:

Sometimes things happen around a university which are pretty rotten and its surprising how few of them are realized by the average student - I'd just like to relate an event to remind us all of the high quality of our faculty:

Recently a certain math prof gave an assignment worth about 1/4 of the course grade. In his presentation he made it dramatically and totally clear that no reasons at all were valid for extensions, machine crashes, or other. He felt we should have at least one course where "deadlines must be met". Well the project was pretty big and a lot of people put a lot of into it.

What would you do if you realized you could not possibly finish a project worth 25% of a grade, and you were sure the prof was truthful in saying he would not extend it? A number of people felt the only alternative was to drop the course, and did so.

And when the big day rolled around and the project was due...he gave a 5 day extension on it.

I think those who expended effort on this project and then felt they had to drop the course, deserve a public apology, and a chance to re-enter the course if they wish, with reasonable provisions for finishing the assignment.

I also think all the many other profs deserve an apology because this assignment will now eat up another week and cause a further delay in their courses too. Any profs of 4th year and 3rd year courses will be faced this week with numerous requests for extensions on their projects because of this irresponsible action.

I leave the prof in question unidentified so that he may make up his own mind on what action is required. I hope he will take this opportunity to regain some of the respect I feel he has lost over this incident.

Rick Kraft  
4B Compusci

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mathNEWS - a news weekly published at the university of waterloo, is financed through mathematics society fees and is available free of charge to math undergrads. The views and opinions expressed herein are those of the mathNEWS staff and are made independently of both the university administration and the math society. mathNEWS welcomes your contributions, suggestions, criticisms, advertisements (published free of charge), feedback, etc. Contact us via room 3038. We put the whole thing together on Tuesday nights in MC 3008; feel free to drop in. Weekly deadline for submissions: TUESDAYS 4:30pm. Circulation this issue: 1500.

Some way or other 3 of us managed to make it through this morning. Thanks to Bob (hope you got your beauty rest) White, Randall McDougall, Mark Shields, Mark Saaltink, Norm Macdonald, Dave (who also got home early) Newell, Janice Halligan, Jean Stemmler, radevitt (who almost made it). As we come down to the wire we are Phil (who sayshe's going)Lanoutte, rfallen (who said he was leaving at 1:00,2:00,3:00,etc), and our dear editor John (how does he stay so cheerful this early in the morning?) neebles and why don't they deliver subs anymore? 'nite Marv,judy,sue,cindy.....