## DEAR READERS :

This is our 1ast issue of Summer 173. Vol. 2 will end with issue \#5, one short of our objective, but (5/6=) $83.3 \%$ is not a bad average. As last term with Vol.l we issued a questionnaire hoping to obtain opinions, comments, suggestions, praise and any other parainsia (P.S. how do you spell par-a-fin-ale-ia?). We would appreciate your return of the completed form to the drop off box on the first floor (in front of the "pit") or to MC3038 (Mathsoc office). Results will be published in the first issue of Vol.3. Since we do not know if the paper will or will not continue; Vol. 3 may or may not exist. Now the PLOT THICKENS:

Will John Peebles continue the tradition?
Will the night of madness be Tuesday night as last term or Monday night as this term?

Will the Phantom, Ishmaile, Dr. Bob return? Never again will M.T. be able to missnell words but will she find hanniness in the world of the Architects or will she start archNEWS to compensate?

And will George be back to disrunt room 3011 with his bat imitations?

## COMMERCIAL TIME

Are any of you, in the reading audience, interested in helping out in a very special issue of mathNEWS for the in-comming frosh? (to be sent to their homes) If you do, read the article on page 8 entitled "INNOCENCE"

BACK TO OUR SHOW...
"THE END"


A NEWS BI-WEEKLY
PUBLISHED AT THE
UNIVERSITY OF WATERLOO
VOLUME 2.5
THURSDAY, JULY 26. 1973.

## the president writes

## A last ARTICLE

Two lasts actually. The President's last article for the summer because this is the last issue of mathNEWS (for the summer we hope). In this regard let me thank all the many people who helped with mathNEHS. I don't know them all so $I$ won't try to 1 ist their names. Maybe I should try Insert-a-Credit, Marsha: stick all the names in here... (what do you mean that's too many spaces? !). While I am passing out kudos for mathNENS, let's plug next term. Honefully mathNFUS will not disappear and in January 1974, we should be all ready for Volume 4. This means that:
"Incle mathNENS wants you:"


There may not be as much "tits and ass" nor as much "radical shit" as in other papers, but we get by. ISHMAILE provides titillations and wordy people like me try to stir up some interest. Sure would hate to see it disappear from something as foreign to a llath student as apathy. As I said, there is another last: my last public act as President. We may have more meetings but they hardly count, nobody ever comes (11\&C 3010, 2:30 on Tuesdays) anyway. It certainly has been fun. Thanks to Steve Smith (Vice-President), Hera Balabanian (Treasurer), Mary Salt (Secretary), Phil Lanouette (Social Director), Marg Dosthoek (Ass't Social, T-shirts and anything else I could find), Rodger Dougall and Tasha Johnson (Coffee \& Donuts), John Higgins (Men's Athletics), Liz Kupka (Women's Athletics), all of the class reps, the mathiNENS staff, and last but certainly not least Dennis Ablett and Susan Bell for their work on our Anticalendar. If I have left anybody out, I am sorry. Work again in January and maybe Cindy will give you special notice. In the unlikely event that anybody reads this far, I will mention that my Gridword
(Continued on page 3)

This week's prof is a very quiet man. One of his jobs is to co-ordinate teaching assignments - the course's and professor's time tables. This operation has been underway since April and has just begun to come under control thanks to a very hard working time-table committee headed by Prof. Brillinger. The co-ordination entails 125 professors, about four to five hundred separate sections of various math courses.

## Prof. of theWeek

C.F.A. Beaumont is an Associate Professor in the department of Applied Mathematics and is an Associate Dean of the Faculty of Mathematics. He was born in Carlisle, Ontario, received his B.A. (Hon. Mathematics and Physics) from McMaster University, his M.A. from the University of Toronto. He is married and has two children. Professor Beaumont has been at the University of Vaterloo since 1960 and became involved in, then a department, the administrative work of the faculty under Dr. R.G. Stanton about 1965. With the formation of the Faculty of Mathematics in 1967, Dr. Sprott became the first Dean and Prof. Beaumont and Dr. Fryer were appointed as Associate Deans.

Prior to his coming to this university Prof. Beaumont was at the following institutions; the Iniversity of Toronto, University of British Columbia, University of Idaho, Royal Military College, Kingston, St. Andrews College, north of Toronto.

Professor Beaumont is involved in a number of committees on campus. They are the Deans Advisory Council, Senate llember (Senate Finance Committee), Comnutor Usage committee, Faculty Admissions Committee, Faculty Curriculum Committee, Faculty Standings and Promotions Committee and he is also the chairman of the Rene Descartes Foundation.

The Faculty of Mathematics is most fortunate in having its several. departments in a unified grouping for this allows a development of programmes in the Mathematical Sciences unequalled anywhere in North America.

There are, however, problems facing the Faculty and one which should be upper-most is that of ensuring that its graduates will be trained in such a manner that they will be useful and sought after young people. To understand this problem it should be rememberedl that for generations graduates in Mathematics have mainly found careers in academic settings - elementary and secondary school teaching and as professors and research scientists at universities. A few found careers in government service, very few in industry, and a few in insurance companies. At least three factors have changed this. First
there has been an increase in the percentage of population attending universities, secondly, in the last few years the job market in the academic professions has reached a saturation point, and thirdly, an increasing need for mathematical scientists in our technological world will allow many of our graduates to find rewarding careers in government business and industry.

Here lies a difficulty; Canadian curricula and programmes in the Mathematical Sciences have been geared to producing academics and this type of training is simply not suitable for entering non-academic careers. The evidence for this is beyond dispute. Changes in curricula and teaching must be made and one of the main problems facing the Science Council of Canada - presently studying the Mathematical Sciences - is that of convincing the Canadian Mathematical community that these changes are necessary and immediate.

Some factors mitigating against change are very deep seated.

There is an historical tradition associated with the meaning of an Honours Baccalaureate degree. To many this tradition is far more important than training young men and women for successful non-acacemic careers in the Mathematical Sciences.

There is the problem of what should constitute a core programme. This is tied in with the meaning of an Honours degree, and as well, many mathematicians feel that what each studied in proceeding to his degrees, many years ago, should still be part of a core programme. The Mathematical Sciences have become so broad that in reality there should be several core programmes, each to fit a major area of study.

There is the problem of rigor. It is said that Honours courses from second year on should be rigorous, whatever that means. From observation and discussions across the country one suspects that it means that the professor who is strongly espousing rigor has nothing behind him except theoretical book learning. It is hard to believe that a riqorous course is more difficult than a course which concentrates on training students to extract from actual world nroblems, numbers and concepts amenable to mathematical manipulation, solving the mathematical problem, translating the solution into the real world. This requires a high level talent and excellent training in modern mathematics. There are universities in Europe which will not grant any mathematics degree until a student has demonstrated an ability to handle such problems. This trainina is being sacrificed in Canadian universities to rigor - rigor mortis that is.
(Continued on page 3 )

There is the problem that graduates with an Honours Baccalaureate degree must be able to proceed to a graduate school anywhere in North America and not bring shame on the home university. Such reasoning is fascinating in the light of newspaper articles talking of hundreds of Mathematics Ph.D."s without suitable jobs. The plain fact is that no one outside the academic community (which is saturated) wants them. Their traninig has not made them very usefully to society. Isn"t it about time for the Canadian Mathematical community to rethink its graduate programmes? $\quad$ Should undergraduate programmes remain straight-jacketed to meet the requirements of outdated graduate programmes?

What does trouble me, and what $I$ am strongly conscious of, is that few Mathematicians in Canada seem aware of the fact that the social and technological problems facing North America today cannot be handled by past mathematical techniques which were so successful in the Physical Sciences. There has been an explosion of new mathematical concepts, methods, and techiques in the last twenty five years and this is being reflected in only isolated pockets of curricular development. For our Faculty of Mathematics to remain strong and rigorous, for our graduates to be successful in finding rewarding careers, the Faculty must be willing to seek out and espouse those changes required to fit our graduates to to-day"s and tomorrows world.
(The President Writes a Last Article continued)
is in this week. There is a long story why it wasn't in the last issue. Anyway, what I want to say is that when Grant and I did it from the clues to see if they were all there--we couldn't. Oh yes, all the clues were there, but...... Anyway, Good Luck! The missing letter is an occurrence of poor spelling on my part. I never have been able to figure out when letters should be double or not. One last item and then I stop.
On Thurs., July 12, in the evening, boat races were held by EngSoc. At the end of the evening, an informal challenge was issued and a new event was born: "Mixed Doubles Society Boat Races" are the thing to come. A team in this event is 5 guys and 5 girls with the Society president as anchorman. Obviously, there is only one team per Society. At stake was a trophy to be presented by the losing Society. In order to save face (we clearly beat the Plumbers: they cheated twice as much as we did!), both teams were disqualified. Accordingly, both teams will split on the trophy. Well, once again, thanks to everyone who helped; and on those who didn't. And have a good wōrk-term.

- The Black Bubble Coffee House, held each Wednesday night in the engineering four lounge, will present its last scheduled appearance of the summer this week. The idea for this type of entertainment was conceived by a few interested individuals, who suitably impressed both ENGSOC and MATHSOC enough to receive capital grants in order to get started; and later the Board of Entertainment to cover further overhead costs. During the month of July a variety of artists, volunteering their services. free of charge, filled a gap in the on-campus summer entertainment. Among them were: Dennis Ablett, Russ Scott, and the Infinite Muse; culminating in last week's performance by John Constant and Robin Wight. This week's final performance will feature the Infinite Muse, Russ Scott, Farley llcGee, and Crammer-MacDonald. The Black Bubble features food from the kitchen of 1101; specialties being: buttered tarts, peanut butter and chocolate chip cookies, and an assortment of fine teas. Coffee and donuts were also provided for those less inclined.
As some interested persons have got into discussions over this event, there is a good chance that the coffee house will carry on in September.


## the Attack of the

## Venusian Savages

The story which $I$ am going to unfold now has never before been put down on paper. It has been passed from mouth to ear for years now, for fear that something terrible might happen to the writer. But, I am a man of great courage, and will attempt to describe to you exactly what I saw, no matter what the consequences.

It was in the early hours of the morning. A low mist hung on the grass. At least, it appeared to be a low mist as I gazed out from a window in the cold, lonely lounge on the third floor. I was tired, and thirsty, after spending many sleepless hours working on my innovative, astounding, theory-shattering thesis "Computer Analysis of the Mating Instincts Between the African Tse-tse Fly and a Doorknob". (Soon to be available at the bookstore for a mere $\$ 36.87$ ) I was so dry of throat, that I decided to buy a coffee from the machine. I wandered over to it. I inserted my dime. It fell through. I tried the nickel .... success! Then the dime. An endiess whirring sound. A cup dropped down, A sticky, brown fluid oozed and trickled into the cup. AND THEN, I, SNM IT!!! It was terrible to behold. A hand came out from the left side of the machine holding a piece of toilet paner. It quickly wined the spout, and disanpeared. Amazing:! I always suspected it was shit that came out of that thing, but that confirmed it. BELIEVEIT, OR NÓT!
dennis Ablett

## (Last issue's solution)



## the phantom reports....

Well this is it, the last regular issue of the term, but there are consolations, for one thing we won't have Ismaiple next term.... (speaking of whom, his APL MAIL SERVICE hath whithered away and died.) The word on APL, incidently, is: "It'll be up when we've made all the local mod's and get it working."
Well, who knows, it may be up by next January......
As for the Honeywell (Alias The Bun, alias the Funnywell) no one seems terribly concerned whether anything of its is done and/or working when it is dumped on the system. There is for instance that "SYSTEM" called "EDIT", some of you may remember this system as working reasonably well last fall, and being moderately useful (or at least innocuous), well that was before it was improved. Now they are giving away QED manuals, and disavowing all knowledge of edit and any related systems (i.e. use at your own risk).
Then there is the "maif" system through which one may receive mail from USER1 to GAUSS......
Oh weili, to close this last issue on a "cheery" note; here are some proposed assembler codes you might find useful or interesting.
IINEIIONIC

| ADCP | Add character to programmer |
| :---: | :---: |
| ADLO | Add logic to operator |
| BB | Branch on bug |
| BBI | Branch on burned out indicator |
| BP 0 | Branch on power off |
| CCS | Chinese character set |
| CRN | Convert to Roman Numerals |
| DO | Divide and overflow |
| EIO | Execute invalid opcode |
| HCF | Halt and catch fire |
| II | Inquire and ignore |
| PCP | Print and cut paper |
| PI | Punch invalid |
| PO | Punch operator |
| RCR | Rewind card reader |
| RPII | Read programmer's mind |
| RTS | Return and start over |
| RIG | Read inter-record gap |
| RWR | Rewrite record |
| SD | Slip disk |
| SBAC | Set Base Address Register from Instruction Counter |
| SSC | Select reader and chew cards |
| STCK | ```Store instruction counter plus 1000``` |
| TPN | Turn power on |
| TPO | Turn power off |
| TPD | Triple pack decimal |
| IJCB | Uncouple CPU and branch |
| IJER | Update and erase record |

Finally to MARK: enjoy yourself, when you read this it will be too late:!!!!

（\＃れさゆWOれ力

## ACROSS

```
H false
2 L IBM's latest development
3 F refers to monetary denomination
L what a cockney does with his cars
    event*
    release
    on edge (paranomaisic)
    baby's communication
    excursion
    kind of frost
    O PL/I version of / /
    A A some are right handed
B P}\mathrm{ red octogon
```

＊To get this it is necessary to omit one letter．There are two of them anyway and leaving it out does not omit it from any other word．

## Gridword Comment

Well we didn＇t have a winner of the last gridword．So what we have decided to do，is there will be two winners of this gridword，which by the way，was kindly submitted by JOHN DARK（as noted in last issue）．While we＇re on the subject of the last issue，we＇d like to say that we feel the above solution of what to do with last week＇s Gridword is probably the fairest． Despite the fact that the first four DOWN clues were left out（qood work．Phil！）， many people submitted valiant attempts at the correct answers（some were surprisingly close！）．We had considered awarding the prize to one of the closest answers，but in the end，realized that this would not be fair to all of the others who tried，but couldn＇t guess as well．This time anyway，we＇re $1000 \%$ sure that all the clues have been provided，so lots of luck．
The first winner will be the first correct entry and the second will be the winner of a draw．The draw will be from the people who submit a solution．The winner＇s name and solutions will be found posted on ．．．． the fourth floor library door，up the set of stairs nearest the Mathsoc office．

DOWN
1 H A B\＆E man needs
$L$ happening
M symbol of royalty
3 F play enjoyed by many
3 G cold english treats
3 tear asunder
5 E Douglas
50 tertiary prefix
5 P visited on sons
6 C the object is not to get
6 D to snitch
$5 \square$ to corrode
7 B informal salutation
7 R preposition
$\qquad$ （homonym）
F －

## WORTS OF WIS OM by ISHMAILE

After the beginning there was llan. And there were the heavens and the earth and the United States. And Man looked at it, and saw that it was good; well, most of it anyway.
And it came to pass on the first six days, that Man saw those things of necessity to him: the fruits of the trees, the animals of the land, and feminine deoderant spray. And on the seventh day, Man said: "Let this day be set aside for quiet rest and thought." And on the seventh day, the people of the earth went forth to their church to pray; because it was Sunday and everything was closed anyway. Except Mac's Milk.
And Man created god so he would have something to pray to. It was thusly that Man created god in his own image: white, male, and protestant. All the seventh day, man rested and marvelled at his god. Then it came to pass, that on the eighth day, llan rose from his rest and went out to begat.
And the first Man begat the second Man, who begat the third Man, who begat Irvin. And Irvin begat Sammy, who begat Moishe, who begat llelvin, who begat Susan (who didn't count because she was a woman), who begat Martin, who begat Rastus, who begat Joseph, who took unto him a wife Mary, who was frigid. And thus it was that Mary, wife of joseph, son of Rastus, begat ali by herself.
And it came to pass that after Mary had finished begatting, that three wise men (Larry, Moe, and Curly Joe), came to Mary and said: "Blessed mother, of what name is this child?" And Mary answered them: "Well...I was thinking of Irving." And Moe said: "Irving: Jesus christ, what kind of a name is that for a kid??"
And thus it was in this way, that the son of Mary, wife of Joseph, son of Pastus, came to be known as christ. Because, after all. Irving is a hell of a name for a kid. It was in his thirtieth year that the son of Mary left his house and went forth to preach to the people. And the people came to know him and know his name. They watched him in the streets and cried: "Jesus christ, here he comes again!"
And it came to pass, that the people of the earth rose un and cried against jesus; and they crucified him because he was an And as he died, jesus lifted his head and cried out: "!ly god, forgive them, for they don't know what the they're doing." And there was no answer. For there was no one to answer.

And in the distance laughter could be heard.

And it came to pass, many years after, that the Messiah was born. And the people cried out, and called him King Richard,
for he was a bit of a dick. And King Richard passed down to his people many laws and proclamations. And he passed down to them the doctrine of Executive Privilege.
And so it was, after the war, that king Richard looked out at the gutted earth and masses of dead bodies he had caused.
And the earth was without form and was void; and darkness was upon the face of the deep; and the spirit of King Richard cried out: "Let there be light:"
.....well, this is the last issue, so I guess you'll have to do without my wisdom for a while. So as I leave I say to you (in the words of Michael Stivack): "Thank god I'm an atheist!"


Theorem: Everv
triangle is isosceles


Proof: Let $A B C$ be anv triangle. Construct the hisector of ACP and the right bisector of line $A R$; let $n$ be their noint of intersection.

Mraw $D C$ and $D H$ nerrendicular to Br and AC resnectively. Clearlv:
$\triangle C R H=\triangle C D C \quad\left(\begin{array}{l}2 \text { angles and } \\ 1 \text { side })\end{array}\right.$
$\therefore C R=C H$ and $\mathrm{HH}=\mathrm{CH}$

## Hence:

$\triangle B C r=\triangle A \cap H \quad$| (hvnotenuse and |
| :---: |
| 1 |
| side) |

$\therefore \wedge H=R r \quad$

Therefore $A H+H C=P C+r r$. and the triancle is isosceles.
O.F.D.

Corollarv: Fverv triangle is enuilateral.
Thanks to Tonv Lavia

## summary of DONUT LOVERS

Mathsoc has been selling donuts for many moons and has noticed unusual characters approaching the tables to devour the innocent morsels of tempting delight. We have tried to generalize on the consumers and here are our results.

Type and Personality Description
Jam filled
-lemon...for the fresh
-blueberry...for Italian beer fiends
-barbarian cream... for the sensuous
-apple...for Jack
-raspberry...for loud and mouthy people
-strawberry...for the normal but not sane
-cherry...for the innocent
Apple fritters...for organic food freaks
Honey dipped...for all those smiling people who are forever happy

Double Double chocolate... for energetic, busy, full of life people

Dutchies...for the rabbits
Orange twists...for unusual people
Plain...for just people
Sugar coated...for nasty people
Peanut coated...for nuts
Toasted coconut coated... for fuzzy headed, plump people with a bad sense of humour

Chocolate...for extra special people
Maple frosted...for naturally sweet people French crullers...for frogs

The holes...for engineers

## DISCARDED

He grabbed me round my slender neck
I could not call or scream
He dragged me to his dingy room
Where we could not be seen
He tore away my filmy wrap
And looked upon my form
I was so cold and damp and scared While he was hot and warm His feverish lips he pressed to mine
I gave him every drop
He drained me of my very self
I could not make him stop
He made me what I am today
That's why you find me here A broken bottle thrown away
That once was full of beer.

## A) SHIPMENT READY

## 4 SALE <br> GREEN <br> "Gauss Lives" <br> $s \mathrm{~mL}$ 2.20 <br> Dark Blue, pale

 BLUE, RED, Ye Low. WHITE, PURPLE "\$Coop Math" " $\prod_{R E} M_{A T H} "$ $S M L$ $\$ 1.90$
## Mathsoc Office 3038

## M.B.D.B.D.B.D. <br> MATH'S BEST B-BALLERS BASH BAG BITERS

At last After three seasons of losing out to St. Jerome' varsity-material-fortified squad, the Coop Math team has gained the upper hand by soundly defeating them 69-65 in the final match. Not only was the Math team great, but they were great. (If this article seemeth a bit much, it's because the marvelous mathis have remained, as usual, unlauded through the season) The whole game was a well-matched contest, providing end-to-end excitement. With 9 seconds to go, "Rauncy Raabe" Kemp was on the line with a bonus. The crowd was silent. The score --67-65. We needed a hoop. Kemp dribbles, looks around, adjusts his stance, his jock strap. He shoots. It's IN And the bonus, too The clock ran out without the Bag-biters scoring again.
Than x to:
Player-coach Raunchy Raabe; captain Dennis "Lay-up King" Albert; "Grabbit" Gord Wilson; John "Juggles"'Ceff; Doug "Dumdum" Hancey; Bruce "Bumbles" MacDonald; Chuck "Choke" Cuba; and last (and least), Doug "Drive'n'Dunk" Weber.
A terrific season, guys.
FEEDBACK(Printed as received through Mail)
001 gauss 17.581 07/21/73
The kind and generous people of MFCF have given me a userid so that I may inform the Mathematics Socity that, NO:, I do not live.
In fact, I have been dead for many yeears.
GAUSS DIES:
And please leave me to rest in peace.
Yours etc. Gauss
002 inewton 17.717 07/21/73
Dont't believe a word that idiot Gauss tells you, after all he's been dead for many years. And as for those "kind and generous" people at MFCF. Why if I could get my hands on that idiot Gauss, I'd use my new invention, "Calculus" on him. That'll learn him. Love, Isaac

## 003 aeinstein 18.046 07/21/73

Dear mathNEWS,
Don't accept anything that those idiots tell you. Why, they can't even spel properly. After all they have been dead many years. Newtons judgement always was slightiy off, relatively speaking of course. Must be leaving, my lab just exploded. Not to worry, probably one of these "Chain reactions" that I've been toying with. No future in them obviously. 1 hope.
Your obediant and humble servant: Albert
mathNEWS - financed by but independent of Mathsoc
Thanks to Rodger.... and we won't bother you again this term. Marsha why did you keep rearranging the layout on me...?... Bruce. Tonight we did it in record time... its only a iftle after 2:nn a.m. Now I, Marsha Tatebe would like to say goodbye to math faculty, mathsoc and most of all mathNEWS....Bye. sob? Did you know that M.T. speit almost everything right... Phil what would you like to say... When did I become an online text editor, I'm just supposed to be doing runoffs. Randall and you? I don't want to say anything. Liz? and where is she? and that Plummer? To add a little white we did it.

## classified

Wanted: New owner. My present owner makes me work much too long, and at ridiculous hours.
My qualifications are:

1) house trained;
2) will not share time;
3) no number crunchers;
4) likes children;
5) works consistently for hours, and inconsistently for auer's. For further information contact the $H 6050$ at 884-4100

## TORONTO APARTMENT WANTED

4 Co-op students want 3 -bedroom apartment close to downtown or subway for Sept to Dec work term. Call Bruce 884-2961, John 884-5029, Malcolm 884-5978,John 576-8772.

```
********************************************
**************************t*t**t*t**t******
```




```
***************************t****************
*******************************************
Why is it that \(I\) always seem to leave that Math building covered in snow?
The Plummer
```

Dear Plummer
Did you ever try using RESDAN? ${ }^{(8)}$
Maggie
(a)

Registered Trademark

## "INNOCENCE"

The Chevron has its special first issue for the frosh; the engineers, their engineering hand book; and now we will have mathNEWS sent to them. In this special edition we want to inform them about....: Would you be interested in helping? if so, then write your ideas down on paper, tell any one of us fools, submit your name to Mathsoc office (IIC 3038) or come out to MC 3011 on-..-.
*The opinions expressed in this issue are not necessarily those of the editor or staff of mathNEWS.
The credits to Mathsoc, John Dark, DENNIS ABLETT, Mark Algar, Ron Rrilliant, Mark Shields, Ralph Barnett, John Aldrich, Robert White, Randall McDougall, Bruce Morrison, Liz Luciani, Phil Lanouette, Marsha Tatebe, Phantom, ISHMAILE (alias Bruce Hahn), Bob Biddle, Brian Hinschberger. To those whom we have to give credit to but could not remember we are sorry.

Goodnight...from all of us, some never to return again.


