pure and simple

STUDENT REPRESENTATION : AN ISSUE ?

From a memo directed at all students in Pure Mathematics from A. Kerr-Lawson (he's the Chairman for the Department of Pure Mathematics), mathNEWS has uncovered yet another example of "student apathy". Yes, that old cliche friend of ours, "Let someone else do it, I'm already too busy", has reared its ugly head again. This time it has to do with student representation on the committee which selects chairmen (chairpersons?).

It seems that some (ie. a great many) students demanded that students be placed on this committee so that "we" too could decide on who directs our academic lives. But alack and alas, it seems that only four brave souls showed up at the meeting to decide whether or not students would be allowed on this committee. Dr. Kerr-Lawson, justifyingly, interpretted this to mean that the majority of students requesting this special representation were "all talk and no action."

However, Dr. Kerr-Lawson did not attain the position of Chairman of such a necessary department by making foolish, rash decisions. In his infinite wisdom, he understood that there were so few students there because the meeting wasn't advertised (big fancy signs and all that) and because the meeting was at a bad time for all, except four, of the students (anytime between 12:01 am (that's 00:01 on a 24-hour clock) and midnight) and because no one knew where it was (except, of course, the four students who showed up) and because ....

Well, in any case, he realized the students who didn't show had a "valid" excuse. So, he has made himself open to suggestions from the student body (ie. go to see him in person) and has said the question of students on this (believe it or not) very important committee can be reopened -- but only if you, the students, actively participate. So, if you have any questions, thoughts, ideas or anything on this subject, GO to see Dr. A. Kerr-Lawson, Chairman of the Pure Mathematics Department in MC 5066.

ISSUE 6.4
FRIDAY, OCT 11, 1974

math NEWS

ELECTORAL EULOGY.

Another election has come and gone in the math building. This one was very typical of others held in past years. Of the over 1000 persons eligible to vote (regular students), only 82 took the one minute neccessary to vote. That works out to 8.1%, a new record for apathy.

In a weeks time, the Math Society will be having a by-election.

Will this set a NEW low record???

Probably, unless there is a very sudden and very drastic change in the attitude of the math undergrads.

Try and make sure that if you are eligible, VOTE(dammit).

On Friday 18th , three co-op math students in year one will be elected. Three

representives from first year regular math will also be acclaimed, if anyone can be found to run.

Incidently, it is not hard to get yourself nominated; all you need is a nomination form, which you can pick up from the mathsoc office, and five valid signatures to complete it.

speaking of pigeons:

DROPPINGS

November 4, 1974---Deadline for dropping Fall courses,

MATHSOC MEETS

This week's Mathsoc meeting saw the reappearance of former Mathsoc president Cindy Harris (now in arts) who chaired the meeting in the absence of Chairperson (and former V.P.) Andy Haycock.

Old business this week was:

a) Coffee & Donuts proposed pay raises of the manager to $25 a week and workers to $2 an hour. This passed and was made retro-active to last friday.

b) It is reported that Engsoc intends to print its posters for the semi-formal on a double standard... those put up outside the engineering buildings will say "Sponsored by Engsoc & Mathsoc", those inside however will omit the "& Mathsoc" (to help ticket sales) though both soc's will appear on the tickets, apparently on the theory that once they've sold the ticket, it's too late.... After considering for several minutes, council decided there was nothing about this that they could vote on and the meeting continued.

New business consisted of trying to drum up workers for Antical (rather unsuccessfully) and the Birth Control Centre's annual request for funds. They were given $100 from the contingency fund.

During the Question Period the question of the CSC's funds was raised. It seems that they are overdrawn by $163.00 from last term, which, on a $200 budget this term means that they may only get $37.00. ...

c'est la vie...

MATHeatre

presents

the first FILM FESTIVAL *

Thursday October 31 (Hallowe'en)
at 4:00 pm in room 2066 (M&C of course)

for your viewing pleasure:
A CHUMP at OXFORD (with Laurel & Hardy) followed by:

DREAM of WILD HORSES , and not to be forgotten:

LIZIES of the FIELD (that's right, Lizies)

for you late risers, at 8:30 pm in 2066 (still)
DREAM of WILD HORSES (again) and the late, great classic,
the film to end all films:
NIGHT of the LIVING DEAD (watch it if you dare-it's Hallowe'en
remember??)

Friday November 1 (the next day)
for the late, late risers (in 2066) at 12 ~~am pm~~ midnight
the wild and wonderful film,
WILD and WONDERFUL - (is it?)   and if you're still awake:

ABBOTT & COSTELLO MEET FRANKENSTEIN (really? how do you do?)

, Saturday November 2 (the day immediately following)
at 4:00 pm (until about 8:30) in the same place
an oldie but goodie: 1938 News Reel (reely?)
then:
IT CAME FROM OUTER SPACE   (but where did it go?)
followed by two not-so-oldies (but goodies):
1946 News Reel , 1952 News Reel
which brings us right up to date and ready for:

U L Y S S E S   (ta da!!)

*
(please note: all films are free: ie no charge)

Math Contests

The Faculty of Mathematics announces the start of two annual mathematical competitions for University of Waterloo students. The first set will be given on Monday, November 11, 1974, 7p.m.-10p.m. in rooms MC. 2034, 2035, 2038 (and 1056 if necessary). The Special-K contest will be for 1st year students while the Euler or Big-E contest will be for 2nd, 3rd and 4th year students. Prizes will be awarded to the top 5 contestants of each contest, this year, by courtesy of the Euler Society.

It would be helpful if those students who are interested in competing would give their names to R. Cooper-MC6151, R. Dunkley-MC5103, D. Forte-MC5076, K. Fryer-MC5106, R. Honsberger-MC5123, or M. Klamkin-MC6215.

Each contest will consist of five problems. The following sample problems are indicative of the kind of problems to be given:

Freshman Contest.
I. John and Alice toss 100 and 101 fair coins, respectively. What is the probability that Alice gets more heads than John?

II. Alice, Betty and Carol took the same series of quizzes. There was one grade of A, one grade of B and one grade of C for each quiz where A,B,C are different positive integers. The final test scores were Alice-20, Betty-10, Carol-9. If Betty placed first in the calculus quiz, who placed second in the statistics quiz?

Undergraduate Contest.
I. A particle traverses one foot in one second, starting at rest and ending at rest. Prove that at some time during the traverse, the acceleration or deceleration was at least 4 ft./sec/sec.

II. Show that if the integral of the reciprocal of a non-constant polynomial is a rational function, then the polynomial must be of the form $(ax+b)$ to the power n .

math ETICS

FLAG FOOTBALL

MATH SLAUGHTERS ARTSIES 23 - ZIP

MATH finally hit its stride as they slaughtered Arts 23-0 in league action this Tuesday past. The game was marred by a few incidents of unsportsman-like conduct as the Artsies had much difficulty breaking through parts of the Offensive line and had to vent their frustrations with a few strategically placed elbows and fists.

The LAST STAR of the game goes to a certain Offensive End who was wide open on an end-delay pass-pattern and who fell down half-way to the goal line. He'll be a lineman next week.

For all the Jock's among you, who-- heaven forbid--also follow Federation politics, a word of anguish, your new Fed rep GARY DRYDEN pulled up lame during the game and had to be shot afterwards. So all 49 of you who voted for him to represent you on Fed council are out of luck.

MATH now has a 2-1-1 record for the season with 2 games to go, the next one being next Thursday afternoon at 5:00 P.M.(note the time change) on Columbia 6 field.

There will be a practice next Wednesday at 4:30 on the field between the MATH building and administrative services.

OTHER

Two more Mathletic events started since MATHNEWS last hit the news stands-- Volleyball and Co-ed Innertube Waterpolo.

On Thursday night, we had 3*10F8 guys and 4 girls out to play Volleyball for the MATH Shirts and Math Skins. During the week though, the captain of the Math Shirts made some key trades and has now acquired the rights to 3 more girls of which he plans to take full advantage (their Volleyball skills anyway), to produce a very enjoyable Volleyball season.

For the Shirts (depending on whether Mathnews comes out on Thursday evening) the next game is Thursday the 18th at 7:30; Village 2 bar at 8:30 (if the pub is there this week).

Sunday night MATH's 2 Co-ed Innertube Waterpolo teams, the Floating Points and the boob-tubers started the season and had a really good time. The next games aren't until after the long weekend.

MATH LOSES TO PLUMBERS

In a disgusting battle against the 'Lower Plumbing' team (Lower Plumbing by definition being those parts of the lavoratory fixtures that are beneath one ,when one does one's business), MATH was beaten 18-0 last Thursday. It was a case of the whole team coming down with a case of the DROPSIES with no-one being able to hold on to a pass.

Neither team generated much offense as the 3 unconverted TD's accounted for 3 of the 6 passes completed by the Pipe Wrench squad.

The problem for MATH seemed to be this fellow called 'twinkle toes' (as he wore no shoes), who could run like the 'road-runner' and left the defense in the dust as he ran for 3 Long Bombs.

We should have a fair chance of beating them in the play-offs though, if 'Flash Noble' can come up with enough speed to cover this boy (so start running Flash).

CO-ED SLOWPITCH

MATH ROBBED OF FINAL

MATH won their first game by default as Village I North didn't show up. This put a strange look in the remaining games as the winner of the Championship round would have to play the winner of the consolation round. MATH came from behind with 14 runs to beat the Cincinati Peds 19-11. Then the stage was set up for the grand finale which math lost to the Lakeshore Lakers 18-12.

Because of a rule non-clarification, it was unknown on Sunday, whether MATH had lost the championship due to its loss to the consolation round winner.

Since that time, MATHNEWS has learned that the tournament was 'Double-Elimination' meaning MATH had to lose 2 games to be out of the tourney. As of this time no re-shedule date has been worked out, but rumour has it that a compromise may have been worked out between teams , effectively stating that, because of the proximity of Oktoberfest and the consequent unavailability of most players from both teams, the tournament will have been declared to have Co-champions.

MATH went all out to win against the Peds and didn't have any pep left for the final. To add to their problem, first baseman Joe Keller was creamed by a base runner when he reached over the first base line to catch an off-target throw by the 3rd baseman.
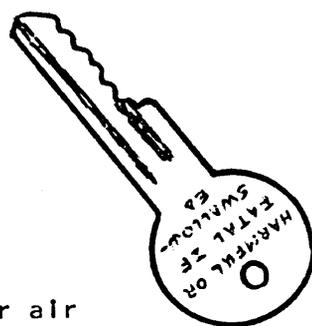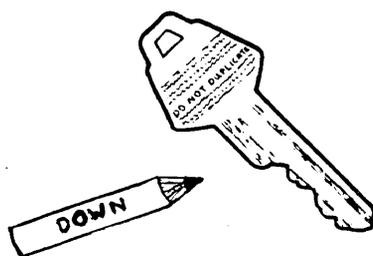
Over the 2 games, Hilda Shewan starred at shortstop and 3rd base as well as at bat, along with the other girls, Dick and Marilyn, who got on base more often than most of the guys.
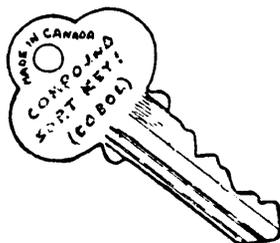
This Week's Grid Word

To submit your solution you can:
1. Mail it to mathNEWS, MC3038, U OF W.
2. Put if in our mailslot in the mathSoc office (MC3038).
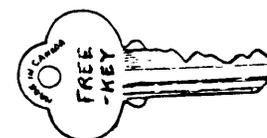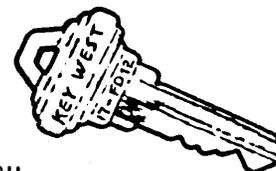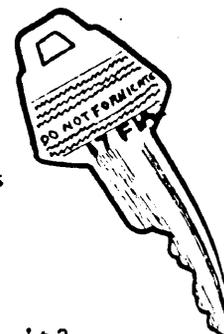3. Put it in our MAILBOX outside 3rd floor lounge.

A T-shirt will be given to the correct solution picked at random (the writer of the solution will be awarded custody of the T-shirt until the solution reaches 18).

DOWN

1   Inflated with wind or air
2   Dirksen's favourite son
3   Load Accumulator
4   Capriciously
5   Adolph's babe
6   Ceremonial
8   Have (fr).
9   George Knudson Belongs to it
10 Debonair
11 Oriental Airways (abr)
12 Essential amino acid (abr)
13 Sophisticated sailor?
15 Deviates from the mean
18 No longer present (abr)
19 Country recently gaining independance
24 Rabbit run
26 She likes apples?
27 In care of (abr)
28 Snobol function
30 Obscene writing
34 Women's Department (abr)
38 Slowly (music)
41 Seasoned sausage
43 Gypsy's favourite feathers
44 Is in "rent a car""
45 American Tiddlywinks Institute (abr)
46 Without purpose
47 Cartoon Cat (abr)
48 Shakespearean antihero
50 It ends the war
51 Deranged pride
54 From worrying about exams?
55 Window dressing
57 ____ processor
60 Our favourite mascot
61 Location of mineral spring
62 National Institute for Idiots (abr)
65 Morning

1   steal
7   G. Gershwin write at least one.
14 Very Important with Nixon's son-in-law
16 Family of lizards
17 coming from
20 Drinking too much?
21 spark plugs
22 not pleasing to look at
23 bug
25 wrist bone
29 mixed up seat on your compass
31 audio visuall (abr)
32 flatfish on your foot?
33 its not very old
35 root mean square (abr)
37 I'm surrounded by water
39 what would sailors do without it?
40 compass point
41 Greek letter
42 pattern+pattern=pattern
49 233's inference
51 script
52 The chord in the Moody Blues 'In search of the last chord'
53 pumpkin
56 Ben Casey (abr)
58 One who eyes the girls
59 isn't it a ____
61 Cosine's partner
63 American spelling of ciau
64 Eastwood Collegiate Institute (abr)
65 Point at which planet is closest or farthest from sun
66 Scramble the tapes
67 Usually a disease affecting the elderly
68 Do you want ham or corned beef on it?

Name _____   Telephone _____

BURLOAF

The Physics Department of the Faculty of Science recently acquired their own computer. Its is a Nova 1200 Jumbo, made by Data General Corporation. Its features include 32767 words of memory, the words are 16 bits long, and it has hardware floating point. There are two disk drives, providing about 2.5 million words of storage. There are also three magnetic tape units. The multiplexor has sixteen lines, fifteen of which are connected to terminals in a room which is accessible by anyone. The terminals are CRT types, which run in full duplex mode. The terminals are supported by a time sharing system, which allows one to run BASIC programs. Other languages are available, but they must be used on the batch facility. Even though the Nova is a smaller machine than the 6050, the two share common properties, mainly the tendency to hang for several minutes, facilitating the user's getting little work done. The time sharing system is very similar to the original concepts used in the design of Honeywell's TSS. The user can only run BASIC, which is half compiler, half interpreter. This prevents the user from doing nasties like illegal subscripting and writing all over core, allowing him to execute his own machine code. The Nova needs the protection an interpreter gives more than the Honeywell does, because there is no hardware protection of any sort provided, so if one could execute his own machine code, he could write all over the monitor, and all over the disk, wiping out user ids, etc.

Another unnice feature of a small computer like this is the lack of file system. Anyone can access any file in the system with any permission they like. This feature was unintentionally put to use by a certain unnamed Mathie. Like a motorcycle gang that decends on a small town to terrorize it, a group of students, with slightly less devious pupeses decended upon the Physics computer. When one first logs on to the machine, he does so on to a "general" number. He is then asked a series of questions, and has to give such information as his name, student ID and which course he is enrolled in to use the computer. The machine then takes this information, and if it is O.K., an ID is created for this individual. He can then log on to this ID, and break into the exciting world (?) of writing BASIC programs. It seems, however, that this group of students discovered a method for "illicitly" signing on, and upon further investigation, found where the program (a BASIC program, no less) that created the IDs was to be found. The next stunt was to look at the files where the user IDs were kept. After some experimenting, one user attempted to LIST the user ID file. Much to his sorrow, the LIST command works a little strangely. When you list a file, it doesn't display it on the terminal, but rather lists your current file into the named file. Now with his current file in the user ID file, he was made aware of what he had done by a more knowledgeable person who questioned his ability to read signs, especially a warning on the door indicating the anomoly in the LIST command. Another one of the crew of students then said HE had read the sign, after, due to a slight syntax error, he had been unable to list the ID file.

The Math Soc office is starting to undergo renovations. If you have paid any attention to what happening, you'll notice that there are now four bulletin boards instead of just one for Math Soc to put up stuff on. When questioned as to the necessity of all the bulletin boards, a Math Soc represenative said they're needed for posting many Math Soc bulletins on. The renovations actually began a few weeks back, when Math Soc gained the old Circle K office. Circle K has since moved to Engineering. Along with the bulletin boards, a partition is soon to be added, and a small area will be given over to the CSC. The area is rather cramped, but everyone concerned, especially Math Soc, thinks there is ample room for the CSC. The new rearrangement means that Math Soc will be innacessible from the CSC office, and vice-versa. This will allow the CSC to be open without a Math Soc person having to be there to unlock the door.
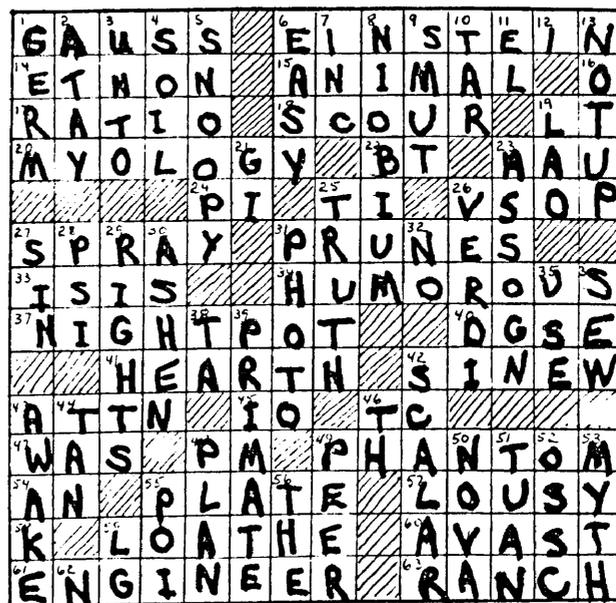

LAST WEEK'S SOLUTION

This week we had 48 gridwords submitted. Not being able to find the answer sheet we were willing to go by majority rule but we ran into a snag: of the 18 "correct" answers half had an answer of "aware" for #43 down and the other half thought it should be "awake". Finally we found the answer sheet and the answer was in fact "awake".
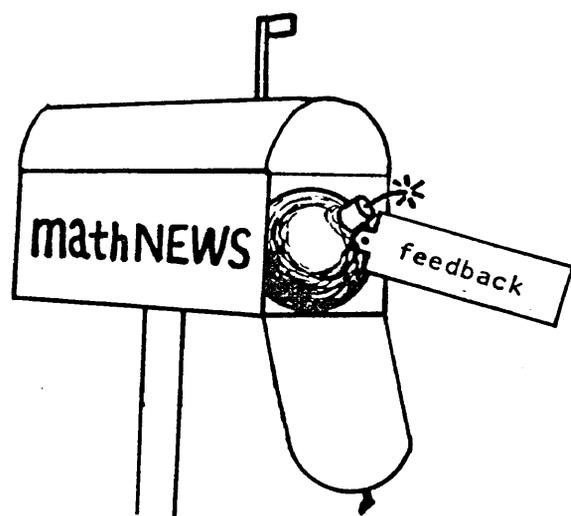
---> the winner by random lot was M. Baskin. Truck on over to Math Soc to pick up your t-shirt.

Honourable mentions go to R.A. Bradley, who was only a week late; Jerry Miller who didn't realize that blank letters are only good in scrabble; and to Russell Brown, a latent plumber, who was sure that the man's name was GEUSS (perhaps he is confusing it with Dr. Seuss, the man who wrote his textbooks).

The answer to last weeks gridword follows:

THIS GRIDWORD CREATED BY ROY GORKA AND DEDICATED TO PAM

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.

---

dear mathNEWS:

I would like to complain about the hours you work on tuesday nights. You see, when the tent city closed down, I had no place to go, and I now am sleeping in the room right below you. I think that you could show a little more consideration.

a tired student.

---

mathNEWS:

Your reporting of math soc proceedings is appreciated, but could we have a little more accuracy and a little less sarcasm. Your "wit" is misplaced. The discussion of the semi-formal took under 20 minutes which is considerably shorter than an hour, contrary to your reporting. Further, the tone of your summary is precisely the negativism that I hoped that we could avoid when I said we should approach the semi-formal proposal in a positive way.

This proposal has a number of very real benefits. The big one is that it allows math soc to provide a semi-formal for those of its members that want one with no planning effort on its part and at considerably less subsidy than in the past. The other advantage is that it helps to increase the spirit of cooperation that has developed between eng soc and math soc over the past 16 months.

As math soc's rep to eng soc, I have heard this proposal debated by both eng soc and math soc. The consensus is that a joint semi-formal is a good thing for both societies. I agree. Let's hope that this semi-formal will be pursued in a positive and energetic manner, not in the cavalier dismissal fashion that mathNEWS projects.

Bruce   Woodrow

Dear Editor:

Several of us in the Computing Centre were interested in the "Burloaf" column which appeared in your paper last week. While factually correct, particularly with regard to the history of APL at Waterloo, the article as a whole seemed to convey an impression that the Computing Centre was out to reduce student access to the computer facilities. Nothing could be further from the truth.

Originally APL was run on a 360/40, before the Math Faculty replaced it with a 360/50. The rationale for installing these machines was that the Computing Centre didn't offer APL at the time, and APL was not in general demand at the time except in the Math Faculty, so the Computing Centre had difficulty in justifying the expense associated with offering APL service. Interestingly enough, the same sort of rationale was used to justify the replacement of the 360/50 with the Honeywell 6050, only this time the service in question was time-sharing. At the time the Honeywell 6050 was ordered, the Computing Centre, realizing that literally hundreds of APL users (mostly students) would be stranded, converted the 360/44 from its role as a Process Control machine to APL. The second 360/44, recently installed, is not a Computing Centre machine at all, but belongs to the Computer Systems Group, an independent research group on the Campus. The CSG traded 360/44's with the Computing Centre for mutually advantageous reasons.

Now then, having gone to all the trouble to provide APL, why would the Computing Centre be interested in reducing student access to it? In fact we are not. However, under the current policy of charging for Computing Centre Services, the Centre requires authorization from the holders of the purse strings before account numbers can be allocated. In the case of the General Use and Computer Science Day APL numbers, the holder of the purse strings is the Dean of Mathematics. Interestingly enough, Mathematics is cutting back drastically on student use of services such as APL. Presumably, as your writer points out, any unspent funds from the Faculty's Computing Budget will be allocated in the future to Honeywell related activities. While we in the Computing Centre have no doubt that money spent on the Honeywell facility is money well spent, we do regard such a diversion of funds with some measure of apprehension. In the meantime, the students are feeling the resultant dislocation by restriction of their access to many Computing Centre services.

The computing Centre plans to continue to pursue its policies of providing student-oriented services for the foreseeable future. Let us hope that the Faculties will continue to buy them.

J.P. Sprung
Associate Director
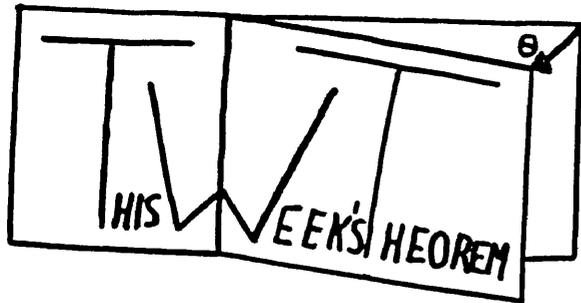Information Systems
and Planning

FED FOLLIES

The federation bylections were held today. In Science, Barry Thienes won over Michael Walls 135 to 28, Rick Weller beat Jim Linnen, in Engineering, 37 to 29 and in our own Math constituency Gary Dryden won with 49 votes to Kathy Peycha's 32 with 1 for Gauss. In Math the turnout was 8.18% , less than the 10.4% in Science but better than the Engineers' 3% (and the Engineers are supposed to be active and involved!).

Next Tuesday Oct. 15 at 2:30 pm in the Math Lounge I hope to hold a forum for all the federation Math Reps. That same night a federation council meeting will be held at 10 pm.

In other Federation news a referendum concerning the OFS $1.50 student fee will be held on Nov. 14. A federation-societies conference will be held Oct 26. See Malcolm Mercer of the Federation External Relations Board about this. Also see Mercer if you want to recommend speakers for his program of technical speakers. This is something which I have supported in the past and I am glad it is possibly being realized. I hope that if you have any questions on any of these issues you see me before next week.

J.J. Long

Remainder Theorem for Polynomials

REQ'D: If p is a polynomial with coefficients in some field, F say, and y is some element of F, then the remainder term when p is divided by x-y is p(y).

PROOF: Perform ordinary long division of polynomials as follows:

Let p be p(x).
Divide p(x) by x-y.
Clearly, x-y divides p(x) p times.
Now, p times x-y equals p(x)-p(y), by distributivity.
Subtract p(x)-p(y) from p(x) to obtain the remainder, namely p(y).

ie. pictorially:

```
            p
       _____
x-y )  p(x)
       p(x)-p(y)
       ----------
          p(y)
```

Q. E. D.

Mathematics
Careers Day
Questionnaire

Please complete either 1 or 2-5, and return to the Enquiry Desk on the fifth floor of the Math and Computer Building./

1. I did not attend any of the Careers Day presentations because
(i) I forgot
(ii) I was not interested
(iii) I had classes

2. I attended the presentations and they (did)(did not) meet my expectations.

3. The best presentations I heard were:
(i)
(ii)
because...

4. The poorest presentations I heard were:
(i)
(ii)
because...

5. What I especially liked (disliked) about the sessions was ...

6. If a similar program is proposed for the future, my suggestion for a better Careers Day would be ...

THE ANSWER
BURLOAF

Dear Answer Burloaf:
   In response to Issue #6.2 of Sept. 27, 74, the article was very informative, or at least kinda interesting to know, but you lost me in the last two paragraphs. I can't see how the seven bit still life should never change from what it is now, and could you give me some hint in finding out what the last one does? I understand that you'll disclose what the Burloaferimeter looks like, maybe with its noble properties too, but I'm impatient.

                              Yours Truly,
                              Sylvia W. Eng

Dear Sylvia:
   Life is played on a grid of squares. To find out what your favourite pattern does, you "automate" it by the following rules:

1) for each square, find how many of its neighbours are living. Every cell has eight neighbours, the eight squares touching the square in question.
2) for any empty square, if it is surrounded by three neighbours, it will be alive next generation.
3) for any living cell, if it is surrounded by two or three living cells, it continues to live.
4) any other cell dies or remains dead.

A more complete description of Life can be found in <u>Scientific American</u>, October, 1970. There is also a description in an issue of <u>Der Spiegel</u> from earlier this year (if you can read German). Now, you can hopefully find out what various patterns do. I do not advise you try automating the last one I published lask week by hand, it goes for a long time.

FEEling Tight?

<u>NOTICE</u>: to all those Doubting Thomases who asked for their Society fees back: Your cheques are ready and waiting for you in the MathSoc office MC3038. If you can manage to get your apathetic selves up and moving you'd better hurry 'cause if they aren't picked up by WED. Oct. 16 at 4:30 pm you won't get them. Thanks.
                              Treasurer

at 6:10 in the morning, we have set a new record... two records in fact...   the earliest issue yet... and the most survivors... Thanks, too, to the anonymous being that contributed the piece of chocolate bar to our mail (male?)... Incredibly, we also had the largest turnout of helpers (?) yet (Is that really incredible, or are we really that tired ???). And the "helpers" were: the longer than usual ragwhite, mike mcgowan, jim the torch mantle, the shorter than usual prraynham, the momentary jean stemmler, the (un)forgettable michael dillon, the headlining claire robitaille, gary the winner dryden who learned ALGOL tonight, michael rose (we presume), ian gollan (the only person ???? enough to eat our mailorder chocolate), mark shields our pungent late arrival, boff and his faithful dog dave newell, the penultimate joe lifshitz who still doesn't know what he's doing here, and.... the omniscient randall s. mcdougall

three cheers, two beers and a soggy matzohball - the 'BUN didn't C
                                                                  R
                                                                  A
                                                                  S
                                                                  H