

# STOP THE PRESSES

Last Monday about 1 hour before ANTI-CAL was to be published, Math Society received a call from Assistant Dean of Math, Dr. Ponzio. He informed us that there had been rumours around the Faculty that Math Society was to be sued over the contents of ANTI-CAL.

Rumour has it that at least 5 professors were disturbed enough by what YOU the students had written on the reverse of the data cards, that they were consulting lawyers about possible suit on grounds of slander and libel.

ANTI-CAL's policy this year has been to publish exactly what was written on the backs of the cards, with no editing (except for racial and sexual slurs - as dictated by the laws of CANADA), as we do not feel that it is our duty to interpret the data, only to tabulate them. To do otherwise would be to enter our own prejudices which we feel is not right. The last thing ANTI-CAL (or Math Society) wants to do is unnecessarily write a bad review of a prof. The concept of ANTI-CAL is to let the students point out to each other, which professors (and courses) they found they could learn from the best, so that others could take advantage of this information when they are given a choice of profs, and also to give pointers to the profs

who are genuinely interested in improving their lecturing technique. If we were to ban all profs, what choice would that leave?

If a student wants to call an individual the worst prof ever, or a miserable little toady, what right do we have to remove those comments and leave in such comments as "I think he's cute", or best prof ever.

At present we have 3 choices:

- (1) scrap ANTI-CAL,
- (2) edit out some of the comments that might get us in trouble,
- (3) let them sue.

Math Society has been in contact with the Federation lawyer, and we will be meeting shortly to discuss the so-called libelous passages. The Federation, along with the Ontario Federation of Students (who have been checking the previously relevant cases at the University of Western Ontario), have pledged the funds necessary to fight any court battle should that be necessary.

Math Society is considering the alternatives, but might have to take it to court to try to preserve the students' rights to evaluate courses.

ISSUE 9.9  
FRIDAY, NOVEMBER 21, 1975

# math NEWS

## SUBSCRIPTION



The mathNEWS team of people dedicated to providing service are once again offering the chance for you to not receive mathNEWS every week while you are out on work term. Yes, you can get a subscription to this fine rag while you are away.

This term, we have 39 people not receiving mathNEWS every week. If you want a subscription to mathNEWS, we need three things from you:

- (1) Your name
- (2) Your work term address
- (3) \$1.50 (inflation has hit)

You can get your very own subscription by trooping on down to MathSoc and giving these things to a friendly helpful office staffer, or by mailing said stuff to mathNEWS, MC 3038. If you must pay by check, please make it out to Mathematics Society. It makes the life of your subscription manager a lot easier than when he gets checks payable to mathNEWS. If you don't know where you'll be, you can subscribe or give us your address in January.

When you have a subscription, your personal copy of mathNEWS will be carefully saved away along with a stack of other subscriber issues in a secret place until the end of the mail strike.

Every week, you can look in your mail box and not find a brown envelope. Quickly you won't rip it open, and not read about the latest things happening about campus. You'll be able to not read various social comments, feedback letters, and fillers. You can fill in time by not filling in a gridword, thereby not giving you a chance at a free T-shirt.

So rush out now and get a subscription to guarantee being not kept up to date. In the event that the mail strike should actually end, all your back copies of mathNEWS will be promptly mailed out to get tied up in the enormous backlog of mail.

Waiting for the last  
man

IF YOU MISSED THE SURVEY OF YOUR FALL COURSE OR YOUR CLASS HAS NOT BEEN DONE BY TUES NOV. 25, THE QUESTIONNAIRES ARE AVAILABLE IN THE MATHSOC OFFICE MC 3038 FOR ANY INDIVIDUAL WISHING TO COMPLETE ONE. ANY QUESTIONS CAN BE DIRECTED TO GARY PRUDENCE ANTICAL COORDINATOR FALL '75.

Interesting facts for this week's problems section. This is the seventh problems section to appear in mathNEWS since its beginnings in late Sept. We received two responses this week from Greg Fee and A.H.F. and almost had a problem submitted by fjpinteric until he realized that he had misplaced it. Maybe next week, Frank? If you have been following this section regularly you may be starting to wonder, "What ever happened to S.C.L.?" Perhaps assignments have finally caught up with him but for some reason this is the first time that we haven't heard anything from him. Come back, S.C.L., we miss you! We have learned the names of some of the winners of the two contests held last week; the Big E contest was won by Rick Cameron, a 2nd-yr. student and Greg Fee placed second. We haven't heard who was third or who the winners of the Special K were yet but will pass them on to you as soon as we find out who they are. Our editor says we only get one page this week so I had better stop using up all this precious space and get on with,

## Some uneasy Problems

We have still not received any simpler solutions to Q13 so instead of giving the solution away we'll let it run for one more week. Also, Matt claims he has a 343 test coming up that he'd like to study for so he wants to get home early tonight (it's only 3:00 a.m. now). So here it is again:

Q13. Show that 
$$\prod_{k=1}^{\infty} \frac{8k(2k+1)}{16k^2+8k+1} = \frac{1}{2} \int_0^{\frac{\pi}{2}} \frac{d\theta}{\sqrt{1-\frac{1}{2}\sin^2\theta}}$$

And now for this week's problems.

Q19. If  $s_n = a_1 + a_2 + \dots + a_n$ , show that 
$$(1+a_1)(1+a_2)\dots(1+a_n) < 1 + s_n + \frac{s_n^2}{2!} + \dots + \frac{s_n^n}{n!}$$

Q20. Prove 
$$\prod_{k=1}^{n-1} \sin(k\pi/n) = n/2^{n-1}$$

Q21. Prove Heron's formula, namely the area of a triangle  $= \sqrt{s(s-a)(s-b)(s-c)}$  where  $a, b, c$ , are the lengths of the sides of the triangle and  $s$  is the half the perimeter.

Q18. Disproof: define the sequence  $a_i$  by  $a_{3n+1} = 2/n^{1/3}$ ;  $a_{3n+2} = -1/n^{1/3}$ ;  $a_{3n+3} = -1/n^{1/3}$

If  $s_m = \sum_{i=1}^m a_i$  represents the  $m$ th partial sum then clearly  $\lim_{m \rightarrow \infty} s_{3n} = 0$ ;  $s_{3n+1} = 2/n^{1/3}$ ;  $s_{3n+2} = 1/n^{1/3}$  and in each case  $\lim_{n \rightarrow \infty} s_m = 0$ , and so  $\sum_{i=1}^{\infty} a_i$  converges (to 0).

BUT  $a_{3n+1}^3 = 8/n$ ;  $a_{3n+2}^3 = -1/n$ ;  $a_{3n+3}^3 = -1/n$

and  $\sum_{i=1}^{\infty} a_i^3 = \sum_{n=1}^{\infty} 6/n = 6 \sum_{n=1}^{\infty} 1/n$  which diverges.

Note: The editor of this section thought this theorem was true so you can be forgiven if you did too. H.S.

Note to A. Many Fold: As you can see you made an error in your 'proof' of this theorem. Your mistake is that the conditions for Abel's test are not satisfied. For Abel's theorem to be true  $1_n$  must be a steadily decreasing function but in this case this is not necessarily true. Thank you for your solution however and we hope to hear from you again.

Q16. Let  $A, B, C; X, Y, Z$  denote the geometrical points corresponding to the complex numbers  $a, b, c$ ;

$x, y$  and  $z$  respectively. Now,  $AB = |a-b|$ ,  $BC = |b-c|$ ,  $XY = |x-y|$ ,  $YZ = |y-z|$ ,  
If  $\triangle ABC \sim \triangle XYZ$ , then  $AB/BC = XY/YZ$ , or

$$\frac{|a-b|}{|b-c|} = \frac{|x-y|}{|y-z|} \quad (1)$$

Further,  $\angle ABC = \angle XYZ$ , so 
$$\arg \left( \frac{a-b}{b-c} \right) = \arg \left( \frac{x-y}{y-z} \right) \quad (2)$$

But from (1),  $\left| \frac{a-b}{b-c} \right| = \left| \frac{x-y}{y-z} \right|$ , so these two

complex numbers must be equal. That is, 
$$\frac{a-b}{b-c} = \frac{x-y}{y-z} \quad (3)$$

so,  $(a-b)(y-z) = (b-c)(x-y)$ . (4)

Conversely, if (4) holds, then so does (3) and hence (2) and (1) so that  $\triangle ABC \sim \triangle XYZ$ .

But (4) says that  $ay - az + bz = bx - cx + cy$  which is equivalent to 
$$\begin{vmatrix} 1 & 1 & 1 \\ a & b & c \\ x & y & z \end{vmatrix} = 0.$$

Solutions to this were submitted by Greg Fee (who used basically the same method as above) and A.H.F. who had the following short solution.

He noted that 
$$\begin{vmatrix} 1 & 1 & 1 \\ a & b & c \\ x & y & z \end{vmatrix} = 0$$
 implied that

the last row was a linear combination of the first two. Hence  $x = \lambda a + \mu$ ,  $y = \lambda b + \mu$ ,  $z = \lambda c + \mu$ .

Hence,  $x - y = \lambda(a - b)$ , etc. So

$$\frac{x-y}{a-b} = \frac{y-z}{b-c} = \frac{z-x}{c-a} = \lambda$$

from which the result follows. Nice going, A.H.F.

Q17. Let  $(\sqrt{2} - 1)^n = a_n + b_n \sqrt{2}$ , for all  $n$ , where  $a_n$  and  $b_n$  are integers. Therefore,

$$(\sqrt{2} - 1)^{n+1} = (\sqrt{2} - 1)(\sqrt{2} - 1)^n = (\sqrt{2} - 1)(a_n + b_n \sqrt{2}) = (2b_n - a_n) + (a_n - b_n)\sqrt{2}$$

But by definition  $(\sqrt{2} - 1)^{n+1} = a_{n+1} + b_{n+1}\sqrt{2}$ . Hence,

Calculate the first few terms to get,

$$(\sqrt{2} - 1)^0 = 1; a_0 = 1, b_0 = 0$$

$$(\sqrt{2} - 1)^1 = \sqrt{2} - 1; a_1 = -1, b_1 = 1$$

If  $a_n > 0$ ,  $b_n < 0$  (as when  $n = 0$ ), then  $a_{n+1} = 2b_n - a_n < 0$ ,  $b_{n+1} = a_n - b_n > 0$ .

If  $a_n < 0$ ,  $b_n > 0$  (as when  $n = 1$ ), then  $a_{n+1} = 2b_n - a_n > 0$ ,  $b_{n+1} = a_n - b_n < 0$ .

Hence  $a_n$  and  $b_n$  alternate in sign.

If  $n$  is even then  $a_n > 0$  and  $b_n < 0$ , or

if  $n$  is odd then  $a_n < 0$  and  $b_n > 0$ .

$$\text{Now } (a_{n+1}^2 - 2b_{n+1}^2) = (2b_n - a_n)^2 - 2(a_n - b_n)^2 = -(a_n^2 - 2b_n^2).$$

$$\therefore (a_n^2 - 2b_n^2) = -(a_{n-1}^2 - 2b_{n-1}^2) = (a_{n-2}^2 - 2b_{n-2}^2) = \dots = (-1)^n (a_0^2 - 2b_0^2) = (-1)^n$$

If  $n$  is even, then  $a_n > 0$ ,  $b_n < 0$ ,  $a_n^2 - 2b_n^2 = 1$  and  $(\sqrt{2} - 1)^n = a_n - |b_n|\sqrt{2} = \sqrt{a_n^2 - 2b_n^2}$

$= \sqrt{a_n^2 - 2b_n^2} = 1$  as required.

If  $n$  is odd, then  $a_n < 0$ ,  $b_n > 0$ ,  $a_n^2 - 2b_n^2 = -1$

$$\text{and } (\sqrt{2} - 1)^n = -|a_n| + b_n\sqrt{2} = \sqrt{2b_n^2 - a_n^2} = \sqrt{2b_n^2 - a_n^2} = 1 \text{ as required.}$$

So in either case we can find an integer  $k$  such that  $(\sqrt{2} - 1)^n = \sqrt{k} - \sqrt{k-1}$ .

In fact we can now solve this equation to find that  $k = ((\sqrt{2} + 1)^n + (\sqrt{2} - 1)^n)/2$ .

This value of  $k$  was obtained by Greg Fee and A. Many Fold (who claims to be from Arts I).

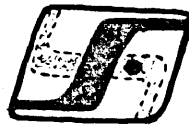
Incidentally, A.H.F. submitted a proof to us that  $\pi = 2\sqrt{2}$  (which proves conclusively that that he really is an Artsie).

In a summary of lectures on electrodynamics delivered at Moscow University by A. A. Blasov the following sentence occurred: "The purpose of the present course is the deepening and development of difficulties underlying contemporary theory."



fed

REPORT



J.J. Long

JULONG REPORTS REPORTS REPORTS REPORTS REPORTS REPORTS

-After trying for 40 minutes to get quorum, the Federation Council finally convened last Sunday. Shortall gave his President's report, discussing his work with OFS and the almost-complete CC pub agreement. Noting the deterioration in the financial situation at UW in the past few years, he said students should organize on a national basis. He apologized for his short temper at council meetings and seemed to indicate that the last part of his term would be better than the first.

Shortall remarked on my political disagreements with him and my resignation. He then recommended C.A.-Arts student Dan Saultner as his new treasurer. Saultner, who has been financial advisor since my resignation, gave his analysis of the Federation's financial position. Saultner is well qualified and knows Shortall well. He will probably reach a better basis of agreement with him on major issues than I did. For these reasons I supported Saultner rather than recommending someone else.

The Board of Communications then tried to get Council to rescind the motion granting a part-time co-ordinator to Radio Waterloo. I felt that I had to abstain on the issue and on a subsequent motion granting Radio Waterloo \$4,670, including a co-ordinator and magnetic tapes (not 8-track). Though I felt that Radio Waterloo should have more than a part-time co-ordinator, two facts disturbed me. One was that the figure proposed was \$800 more than the \$3,800 originally requested.

Also, a Radio Waterloo document dated September 21 was read by Brian Miatello. It argued against the principle of having paid personnel at Radio Waterloo (but did not mention that they only wanted the Federation to pay the salary if government grants could not, as they indicated at the council meeting). The document did not affect many councillors: the \$4,680 for Radio Waterloo was approved. A compromise outlined by me in last week's mathNEWS was defeated. The result did not surprise me: many of those who had supported me on November 6 were absent for this meeting.

Later, Shortall discussed the agreements with the university regarding the CC Pub. He answered Councillors' questions and revealed that he was ready to sign the agreement if a section detailing how the university will prorate costs to the pubs is altered.

Shane Roberts came to Council with two ideas. One was that a committee be set up to investigate the feasibility of the Federation joining other groups to set up a publishing house. He and Ralph Torrie also suggested a committee to investigate and try to improve Council's effectiveness. I wonder how far either idea will go.

I'd like to know more from you regarding the major issues confronting the Federation. See me in Mathsoc MC 3038, phone me at 745-0779 during rare times when I'm at home, or write mathNEWS.

## AFTER the FACT

Faculty Council, at its November 18 meeting, elected K. Shah as its representative to the Environmental Studies Council and Jack. D. Kalbfleisch (the one who didn't write the book) to the executive Committee to replace Dr. R. A. Staal. Shah accepted because H. H. Crapo had declined last month; it is to be hoped Kalbfleisch doesn't decline.

J.J. Long moved that full-time students be allowed to take 4 courses a term if they have previously completed the number of full terms required by their program. The motion was tabled, although JJ said that it was only a temporary measure until a new system of requirements was proposed to the faculty.

Later there was a motion to limit midterms to the single week of February 23. This was defeated soundly as it restricted courses to one midterm for the term, and could cause a student to have 6 or more midterms in one week. Profs and students didn't like these possibilities and referred future action to the Executive.

Conversely, the council also discussed having a reading week in each term. Opinions on this issue varied from total opposition to total favor and some who wanted such a week only in the winter. J.J. Long opposed the matter because he felt that students would use the week as a slack week, that it could make the term longer, and that the logical progression of a course would be broken. He opposed a winter-only break because of its unfairness to co-op students. This issue is being referred to the Executive.

Dr. K. D. Fryer reported on Math's scholarship money, and Dean Forbes on our increased enrolment and BIU's.

The changing of Faculty requirements is also being discussed. The maximum-terms requirement for a degree is to be replaced by a maximum-course-attempts rule for each program. You may be able to drop failed courses from your average, but math-average requirements would be higher (70% for honours has been suggested). Also, you would be allowed to take 3 or 4 courses a term. The proposal is essentially good, but some profs also want to drastically reduce the drop period. This would be bad. Often one doesn't really know how one is doing in a course until the midterm is written. If you want to stop this measure, I urge you to act now.



exc  
e

rpt from Board of Communications document dated Sunday September 21, 1975 read to Federation Council by B. Miatello Sunday November 16, 1975

.....aspects of revenue-related acquisitions we would like to touch on briefly. We would like to eliminate the co-ordinators salary completely because we feel that in an organization so heavily reliant on volunteer labour (total person hours per week is estimated at 760), to pay one or two people would not be fair to the others who put in just as much effort and would erode the spirit of the station in the long run. Witness what is occurring at the Chevron, and to a lesser extent, what is happening in the Federation itself.

# ( ) BURLOAF

A warning: A certain Hack has taken a course to develop his psychic powers. Now, instead of actually having to sign on to the computer to crash it, or actually having to press a button on a microwave oven to blow it up, he will be able to do these things in the comfort of his own home by merely directing psychic waves at the objects in question.

\* \* \*

Now we present a feature that tries to get away from the usual computer science and present something along a more pure-mathematical line.

Pascal's triangle is a well-known mathematical structure. An interesting feature is that Pascal's triangle can be extended to any number of dimensions. For example, in three dimensions we have Pascal's pyramid, in four dimensions, Pascal's pentatope. Each element of an n-dimensional Pascal's structure is the sum of the n terms that occur most directly above it in the n-1 dimensional previous layer. If the desired element is on the n-1 dimensional "edge" of such a structure, some terms that sum to the element will not be in the structure. These missing terms are taken as 0. The sum of all the elements of the mth layer of the n dimensional structure is n to the power m.

Now we will consider a few specific cases. First, extend Pascal's triangle to one dimension. This gives us Pascal's Line:

1  
1  
1  
1  
1  
.  
.  
.

Here, each element is the sum of the one directly above it. Pascal's line fills you in on the probabilities when you toss n one sided coins. Pascal's line also reveals the general solution to the expansion of a monomial raised to any integral exponent. The expansion is as follows:

$$(a)^n = \sum_{k=0}^n \binom{n}{k} a^k$$

Pascal's triangle can also be extended to 0 dimensions, giving Pascal's Point:

1

Here, each number would be the sum of the 0 terms of the previous layer right above it, except that with 0 dimensions, we only have one "layer". (If we did have layers, they would be -1 dimensional.) Apparently, there are no probabilities when you toss any number of zero sided coins except when you toss zero of them. Also we have no solution to the zero-nomial except in the case where we raise it to the zeroth power:

$$( )^0 = 1$$

...But then we generally define anything to the zeroth power to be 1, and I guess nothing qualifies as anything.

Going the other way, Pascal's triangle can be extended to infinite dimension. Even though every element in this structure is produced from the sum of an infinite number of terms in the previous layer, no particular term of any given non-infinite layer is infinite. For example, the top layer is a solitary 1. The next layer is an infinite supply of 1's. The next layer is an infinite supply of 1's and 2's. In fact, no element on the nth layer is larger than n factorial. The fact that there are no infinite numbers here is due to the fact that the infinite-dimensional Pascal's triangle has no "core", all of its terms lie on the surface of the structure.

\* \* \*

After arriving on time for an appointment at Health Services, I was asked to have a seat and wait a few seconds. I started glancing through one of the many Reader's Digests lying around, and after a while came upon this quote:

"A person with lots of leisure time is one who shows up for appointments on time."

At this particular time, the quote seemed strangely appropriate.

\* \* \*

Now, for our regular feature, which we always present without fail (most of the time), here it is, the INTEGER\_OF\_THE\_WEEK. This week's integer is:

24

24 is sort of useful in probability and statistics, for it represents 4! (four factorial) and where would probability be without factorials? (Come to think of it, where would probability be without urns, there would be nothing to draw red and black balls in a random order from...) 24 is a practical number (practicality is a well defined mathematical property: A number is practical if you can take combinations of the the number's factors and sum them to give all positive integers less than the number.) 24 is also an abundant number. This does not mean it occurs in lots of places (although it does: just look at any list of calculus marks), but rather that all its factors, excluding itself (i.e., 1, 2, 3, 4, 6, 12) sum to a number larger than 24. The prime factors, namely 2, 2, 2, 3, when written in pairs give the largest two integers less than 24, i.e., 22 and 23. 24 is the smallest positive integer besides 16 that has four prime factors. (not a very interesting property, really). As well, 24 is one of the only two factorials who have the number of prime factors equal to the number of which they are the factorial.

\* \* \*

A fact from our Tidbits (or tit-bits as they would say in Britain) of Trivia department: Humans, chimpanzees, sea otters, Galapagos woodpecker finches and an Egyptian vulture are the only known habitual tool users.

$\beta$ -Persei-60? WHY?

# mathLETICSDS

The Grad challenge was met on Sat. Nov. 15 in the game of body breaking (broomball) by the mean and ruthless prof team led by Gerry Lawless. This special group of faculty managed 7 goals to 6 against the horde of overaged teenyboppers who labelled Margaret Reid "their inspiration" (rightly so). Never before has such a game been played. Rules created for the occasion due to the lack of broomball sticks allowed those without the sticks to do anything to the ball as long as it moved (hopefully). Thus the game was a combination of football, soccer, baseball and shot putting.

This made the game very intense as each team kicked, slashed, blasted their way from goal to goal and sometimes they remembered to take the ball with them.

Dean Forbes played goal for the pros in the second half of the game. With great speed and agility he made two great saves in a one on one situation and a two on one. His defense was the dynamic duo of Haff and Cowan. This was the turning point of the game for the faculty which led them to victory.

The grads put forth no outstanding player as they relied on the hit and miss system. It was mostly the latter except for a few lucky hits.

# MYTHLECS

HOTDOGS 4 ALCHEMISTS 3

No, that's not the score but the number of players who showed up on each team, but Dryden is convinced the Alchemists are the UW waterpolo team, but Ken the lifeguard (you remember him) thinks otherwise. Before game time your mythNEWS reporter conducted an interview with the famous Lorraine but did not get very far, as Lorraine instantly denied her existence. Lorraine couldn't seem to use her hands as well as usual, so she tried to come out of her tube and hustle the opposition and distract their goalie, but to no avail.

Scrooge, who started as a sieve letting in three goals while he did his exercises, suggested that Dryden the Fly should quit. Dryden couldn't scare with the ball or the broads (there were none except Lorraine) so he threw his Innertube in the net. Later Ebenezer Clark wisely replaced Dryden at forward, as Fly was banished to the net.

The Hotdogs being behind staged a rally led by Lorraine, who has an unusual way of carrying the ball (between her legs) with four goals and Krych with one (the only good thing he did all game) they pulled within one. But Dryden who was constantly outflanked by the Alchemists was the key. His lousy goaltending prevented the Hotdogs from tying the score. Despite their perpetual power plug they lost 6-5.

Well-this sure wasn't one of those exciting weeks. No waterpolo scores, no volleyball scores, and the Mythletics editor didn't even score.

What we have today are the exciting results from 2 broomball games.

Last Friday at noon, the HOTDOGS utterly decimated the Wrenson Wrats 12 - 0. You can tell a poor team when DRYDEN can get 2 goals. KRYCH was tossed out of the league for assault with intent to injure (weapon: a broomball) after his two-Bobby Hull type goals.

On the plus side, although there weren't many shots on the HOTDOG net, COASTER managed for a change to stop them all.

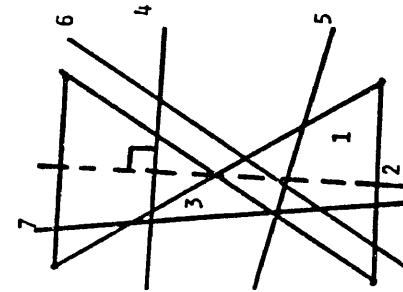
The people who didn't score were: SCROOGE (maybe he should stop drinking before the games), CATHY SCOTT (she made up for it by getting hurt), LORRAINE (has she ever scored? a goal that is), Clear-the Track Martin (CATHY didn't score a goal-but she did-out muscle the opposition).

In the second game MATH HACKS played Guthro's Horde and managed to eek out a 1 - 0 victory on a goal that BOB CAMERON powered by Bernie Parent (on-loan from the Philadelphia Fleas).

The 3 stars of the game were: KAMAKAZE PRUDENCE for his diving face blocks (some said he had nothing to lose, but I think that's a little unfair), STEVE JARVIS not because he did anything really spectacular this game, but its about time he got some credit for being able to do anything productive with those boots he wears, KATHY-X for not hurting anybody on our team this week.

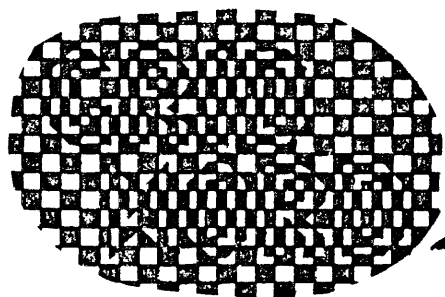
In our new game show "BEAT the REAPER", if you'll remember last week CATHY SCOTT did not just narrowly beat the reaper. In a return match this week the reaper scored an aggregate score of 3371 points for and 77 against thereby claiming his reward. As such "that red-headed broad" will be out of action for a life-time or two due to extensive damage to the patellie region.

69ers 17  
Math Seahorses 7



Well that's what it seemed like (a football score as the N5 69er's backed by stellar goaltending (or was it our poor shooting) and the cheating of forward Dave "Arlo" Guthro defeated the Mathies. Of course only Waldo Prudence, Steve Jarvis, JJ and Andy Mueller showed up (and they played in the previous games). I won't mention any names but the absence of Willy, Wicked Wanda, Irene, Dryden, and Ebenezer was detrimental to our cause. JJ got only a goal and an assist and when he replaced Jarvis in net he was a veritable sieve to Green Hat and K2.

With 5 minutes left to go in the game a big cheer was emitted. A Math comeback? No, JJ leaving for a Fed meeting. With his absence Math fell deeper in the water and behind. Math continues its struggle for last place next week.



WATCH OUT  
FOR  
PIGEONS

## GRID COMMENT

The quality of last week's GRIDWORD was exhibited well by the great response it got. This of course came as no great surprise to me; I had a pretty good idea of the superior quality of the GRID when I created it. Of over forty submissions, twenty-nine were actually correct. The most common mistake was the occurrence of DIX in place of LIX for 77 horizontal. This grave error was committed by all of two people.

And now... To R. Butterworth, we thought your solution was so great that it is presented below (it also saves us the bother of making one). Sorry, but you didn't win this week. To I.R. Taylor, you didn't win either and it might interest you to know that LXXII - 3 is LXIX, not LXXX, and Happy Easter. To P. Kelly, the idea is to submit a solution correctly not expeditiously. To D. McInroy, your submission was correct but after writing 73147033 in Roman Numerals as MMMMMMMMMMMMMMMMMMMM...MMXXXIII you don't deserve to win, and you didn't. To R. Thwaites, not only was your submission correct but you also won. If you thought the GRIDWORD was a challenge, try getting your T-shirt from mathNEWS' intrepid editor.

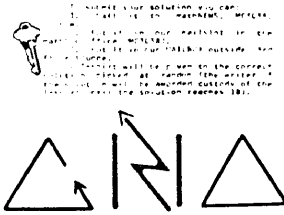
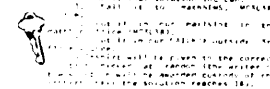
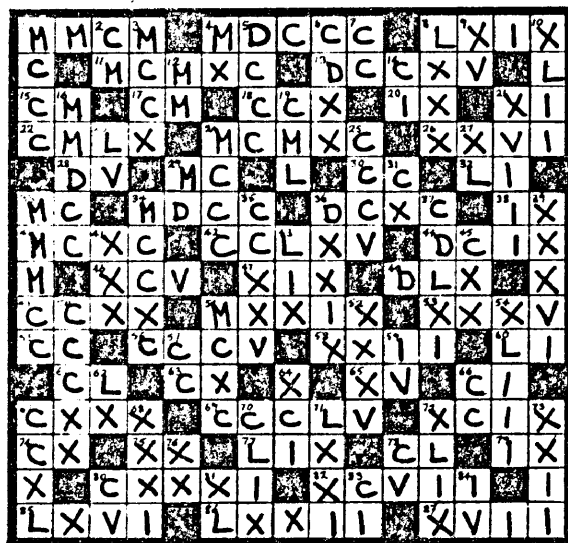
### ACROSS

- Edward's automatic reaction around west coast weather (7)
- Any lab carelessly found in N.Y. (6)
- The nut I changed for foreign darkness (4)
- Add back less 500 with comfort in Africa (7)
- Close mixed up ball game around ring can lead to this (7)
- Half the integers (4)
- Here's to less time for fast parsing (6,2)
- Fair Sally thrown into bondage (7)
- Could stir up elation with IX (5)
- He met a muddled subject (5)
- Demon carrier without a peso has no local course (8)
- 24ac. There is no freedom of input for this company? (7,4)
- Fish with sulk (7)
- For each one forward we often do this dance backward (3,4)
- Caught eggs and scrambled them (7)
- This soft pat is roughly found in Rome (6)
- Afternoon meal and French street are fact (4)
- When worn one can be in for a black epitaph (4)

### DOWN

- Good weather mode of convertible makes good programming (3,4)

NAME Ray Butterworth ID. NO. 71212246



PSEUDONYM:

ALIAS:

STUDENT ID:

NOM DE PLUME:

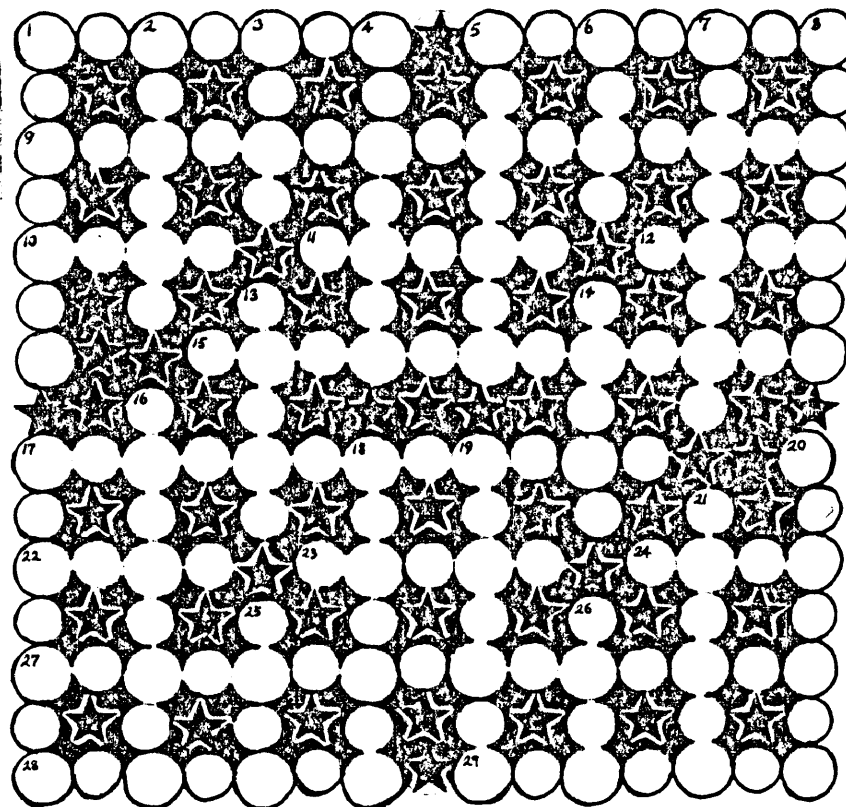
NOM DE THEATRE:

STAGE NAME:

ALIAS:

PEN NAME:

ALLOYS:





mathNEWS welcomes your criticisms, comments, suggestions, etc. All letters should be signed, but if requested, a pen name will be used. Put your Feedback articles in our MAILBOX on the 3rd floor outside the lounge, or mail it to us on the 'Bun' (userid mathNEWS), or take it to M&C3038 and have it put in our mail slot or put it in the mail addressed to mathNEWS. M&C3038.

## Disillusions

Dear mathNEWS:

I am not sure how to characterize my emotions on this topic, but I feel that its time has come to be expressed.

COMMENT... There is a growing segregation of students within this university, amongst universities, and indeed within society itself. The problem is far more deep-rooted and symptomatic of greater evils than a superficial glance would attest. I speak of several issues compounded into one grand malaise, and shall outline the major ones.

- 1) racist slurs on washroom walls,
- 2) individual groups deeming other groups inferior either through jokes or through actions,
- 3) faculties snubbing others by barring each other from social gatherings,
- 4) village residents behaving as if a different lettered or numbered floor is less equal, and all acting selectively better than off campus students,
- 5) universities breaking agreements to cooperate in entertainment arrangements that benefit both.

These are the issues which should bother us all. Granted that rivalry increases spirit, it is one thing to make fun and another to act out. Acts such as barring a student from a university activity because he/she is not of the same faculty, keeping a floor-party strictly to those floors, asking students to leave society offices, or worse, letting them stay and degrading their faculty, perpetrating the latest racist jokes, et cetera ad nauseam.

I see the reason for humour and faculties are here to separate course units; villages have floors due to a structural need, and universities are separated due to geography and course specialization, but in one thing we are all the same. We are all students, students who are supposed to be in higher education, to solve tomorrow's problems, wars, famines, hatreds. We face a common front of the masses who do not see a need for us and want to cut our budgets, and our faculties, as well as our courses. We have no need for in-fighting. Let us keep our humour, our little prejudices and jokes, but more important let us live together, show a common front together, and enjoy our stay at university a little more, TOGETHER!

a disillusioned student,  
amzador

# HELP!

HELP!!!!!! Please print the following. The fate of MFCF as we know it may hang in the balance!!

The first time a student at UW walks into MC 3018 and sits down at one of the terminals at the back of the room he is usually quite surprised at what comes out of it. It seems to resemble nothing as much as a bunch of chicken tracks. Well, if he thought that, he would be close.

Due to recent decisions by the administration, it has become necessary to reveal that certain secret experiments have been carried out in The Building in conjunction with the biology department.

The final goal of those experiments was the development of a biologically-oriented computer. Yes, I can see that some of you have already guessed the secret. Those innocent-looking pigeons that roost above the main entrance of this building are not just your ordinary run-of-the-mill pigeons. No indeed! They are super mutant pigeons that control those terminals in MC-3018 labeled APL (Approximate Pigeon Language).

Those terminals effect a semi-compilation into an altered approximation of the pigeon's working language, whereupon they solve your programs and return the output.

The advantages of this system are obvious. Not only does it save costly hardware expenses (the only costs are a little bird feed), but the campus as a whole is enriched by the automatic dispersal of a completely natural fertilizer.

However, this entire revolutionary project is in jeopardy. On November 14, the Chevron revealed a nefarious plot by the administration (goaded by the maddened mindless fools from beneath n-jneering lecture hall) to poison the pigeon-computers, and put an end to the hopes for peace in our time.

STUDENTS OF THE CAMPUS ARISE!!  
SAVE OUR PIGEONS for PEACE  
dwbrown, president S.O.P.P.

## unclassifiable ADS

### Musica Antiqua

-A program of Medieval and Renaissance Music by music students and friends, featuring:

- David Walker - tenor

- Ron Reed - lute

- Sunday November 23 at 3p.m. in the Conrad Grebel College Chapel

### APARTMENT TO SUBLET

2 bedroom furnished with balcony and parking space. 15 minute walk from U.W. Only \$180/month. Call Craig or Brent 885-3681

WANTED: 1 person to share furnished 2-bedroom apartment for summer of '76. Have 2 guys already. Rent \$65. Five minutes by bike to campus. Near King and Columbia. Call 885-0655 after 5pm.

It was with a mixture of over-confidence and trepidation that I entered the elevator Tuesday night (Wednesday morning), bound for a strange rendezvous, after which I would never be the same. I, a first-year student, was venturing forth into the domain of the awesome UNIX. Even now the very word strikes terror in the hearts of those who never venture above the second floor. UNIX is the last refuge of those caught between non-shrinking numbers of hacks and ever-increasing numbers of TSS users.

UNIX, however, is not the awesome beast that some might imagine it. This Bell (Murray Hill) operating system on the sixth floor PDP-11 has features which compare favorably with TSS, although some don't. Its prompt is simple and non-verbose, but its editor is worse than any other - above the math 132a system (which coincidentally also uses a PDP-11, although its editor is not even in the same ball-park as UNIX's).

The outstanding feature of UNIX is, of course, the "c" programming language. "C" is a logical derivative of "b" (knowing even a little "b" makes "c" much easier), and while it lacks a numerical input routine, it has so many other features that one can ignore that. Assembler is also available, and a version of fortran which is somewhat worse than that on TSS (in other words, stick to "c").

If you are finding yourself caught between new TSS users who keep arriving and old hacks who won't leave, maybe you should try UNIX. You can get started by logging-on to userid "jqpublic", but if you like it you should see Ernie Chang (ejhchang) or Gary Sager (grsager) about getting your own userid.

Welcome to the masthead of mathNEWS' 79th issue. One more issue this term and mathNEWS will have completed 3 years of operation. This issues (and others like it) are tossed together by an all volunteer staff. We wrote it and typed and QEDed it and ROFFed it and cut it and taped it---- with the net result that we have 8 pages for which we try to be responsible..... We have strong hopes that Graphic Services will turn this into 1200copies by Friday the 21st (no its not the 28th Mark)...

Now for our standard issue of junk, trivia, rumours and the odd fact....rumour has it that the Feds don't like their new symbol (see p3)....mathNEWS recently got a request for some of its issues by a Russian prof who was visiting UW....we have a request from Gail Taylor asking all students who are submitting INCompletes this term to pick up the necessary form from her in MC5115....there will be a party in honour of Earl (former security guard in the math bldg) on Nov 24 (details at mathSoc) ...speaking of parties....there will be a math Xmas party on the last day of classes....thanks to the efforts of Gary Dryden it looks like a tax rebate is due for antiCAL and mathNEWS...

...thanks to the single-handed efforts of Gary Prudence the antiCAL surveys are moving right along....with space running out we present the staff who ate kaisers until we discovered the microwave has an off-on switch...then we ate hot dogs until our stomachs gave out and then there was the coffee????...but in any case the bodies were.... J.J.LONG on words and coffee; GARY PRUDENCE who made a clean sweep; G.G.DRYDEN who made a myth of himself; HTIEK MOT (dedirg); RANDY MORRISON and MATTHEW SMITH came up with less than allowed; MIKE DILLON who grated; PETE RAYNHAM who wrote a dozen or so; D.W. not great GILLET; and the final threesome who played 9-5-2 from 5am to 6am were MARK BRADER, RANDALL S MCDUGALL and DENNIS MULLIN. Last issue of term will be tossed together on Nov 25 in MC3011. Their was someone who worked on the last issue who i forgot too mention....this time i've forgotten his name...maybe in the next masthead... it is now 8:25am and our smiling C&D manager has arrived to count the kaisers we stole. The world is starting to wake up...with the exception of somebodies lying around MC3038....as a matter of fact Kathy P. decided it was best not to disturb the dead so she left after a minute Selma's quote of the week...or so rumour has it....I wish the computer would love me.....where is the end of this page????! ...there was a paper that appeared recently which had no name on it...rumour has it that it is an embarrassed science paper

all most there....it is now 8:34 and mathNEWS has.....

## BLOOD DONOR CLINIC



FANG YOU!

As we go to print we have the latest figures from the Blood Donor Clinic. On Tuesday just over 300 units of blood were harvested. However the lists for the Blood Bowl Competition had only 202 signatures. Which means there were about 100 donors under the impression that they did not belong to any faculty.

The Blood Bowl is awarded each term to the faculty which has the highest percentage turnout. Math has achieved this honour many times in the past.

On the first day the faculties managed a turnout as follows:

- Math - 80
- Science - 36
- HKLS - 23
- Engineering - 23
- Arts - 21
- ESS - 18
- Integrated Studies - 1

## The Day Stocker

The gremlins, like everyone else, have been busy in the last week, making trouble and irritating people. So far this week however, they seem to be under control.

After a chronic plague of the little devils, the PDP-11 for MC 2017 is up and running better than usual after a desperate exorcism performed by our friendly PDP (Problem(set) Doing Preventer) man. It has however, suffered another attack by the four G's (gremlins, ghosts, ghoules and Graham), maladjusting its priorities so that run-times are setting records (longest time run-archive-dearchive available) and so are edit-times (longest wait for List command). Students in math132a have noted with relief that deadlines have been extended one week.

Meanwhile, on the TSS scene, the paper war is being fought. Janitors insist on removing ALL the paper from the 2741 room. Last Wednesday events came to a head as all the filed printer output disappeared. Drastic measures were taken and it was recovered the following day.

By now you have probably not realized that this is not your average COLDSHACK writing. In fact, C is down with a "bug" (debug) and asked me to fill in for him.

So, on behalf of COLDSHACK,

BANANACEKMATE

