Pre-Registration Schedule

All regular and co-op Math students who plan to continue their studies in the Fall 1976 term should pre-register **during the week of March 15-19, 1976,** as indicated below.

All students pre-registering for *Year 2 regular* (except St. Jerome's), *2A Co-op* (except for those selecting the teaching option), *2B Co-op,* and *Year 3 Pass* should pre-register in room MC 5158 between 9:30 and 11:30 any of the five days, or between 1:30 and 3:30 any day except Tuesday.

All students pre-registering for *Year 2 regular (St. Jerome's)* should contact one of Professors Mowat (SJ.1) or VanStone (SJ.2) between 9 a.m. and 4 p.m. any of the five days.

Co-op teaching students should see R. G. Dunkley in MC 5103 between 1:30 and 4:00 Tuesday.

The remaining times are for students in years 3 or 4 (Regular or Co-op) in an Honours or General programme.

Chartered Accountancy and *Business Administration* students should see J. D. Kalbfleisch in MC 6092A, 9:00-12:00 or 1:00-4:00 on Wednesday, 11:00-12:30 or 1:30-2:30 Thursday, or 9:00-12:00 or 1:00-4:00 Friday.

Computer Science students should see J. D. Lawson in MC 3004A Monday and Tuesday between 2:30 and 4:30, or in MC 6091A Wednesday between 2:30 and 4:30.

Applied Mathematics students should see M. Snyder in MC 5007, 2:30-3:30 Monday, or 1:30-3:30 Tuesday, or 2:30-4:30 Wednesday, or 9:30-11:30 Friday.

Combinatorics and Optimization students should see C. Haff in MC

Wednesday.

Statistics students should see C. Springer in MC 5039, 10:30-12:00 Monday, or 1:45-3:30 Tuesday, or 9:30-11:45 Thursday, or 1:45-3:00 Friday.

Actuarial Science students should see F. Reynolds in MC 6092B Wednesday 10:30-12:00 or 2:30-4:00.

Pure Mathematics students should see D. Higgs in MC 5084, 10:30-12:30 Monday, Tuesday, or Thursday, or 1:30-3:30 Tuesday or Thursday. Students unable to see Dr. Higgs at the above times should see Prof. Staal in MC 5067.

Since **the numbers of all math courses are changing in the fall,** it is advisable to have a copy of the 1976-77 calendar before pre-registering! They are available in the Registrar's office in Needles Hall.

Here is the cross-reference list of

math NEWS

Smoking to be Allowed in MC 3014

I have personally received complaints about the No-Smoking sign in MC 3014, a study room. It was pointed out that since non-smokers have their own large, quiet study area, namely the library, it is only fair that smokers have their own.

I agree that this is a reasonable request, and I passed this request on to Dean Forbes, who is going to request several stand-up ashtrays to be put in the room and the sign to be removed.

I am very critical of the attitude of the smoker who made the complaint to me that he and his colleagues were going to smoke in 3014 whether it was allowed or not. These same people had made no effort on their own to ask the Dean to allow smoking there. People who make their own rules in this manner should be sent back home until they learn how to become good citizens.

There is another reason why smoking in 3014 might not be appropriate, regardless of facilities available to non-smokers. That reason is that people in this university are expected to use ashtrays wherever they smoke, so as to keep the place clean. Smokers in 3014 have not done so, and they leave dozens of butts on the floor. The fact that there are no ashtrays in the room *is no excuse*. When the Dean's ashtrays arrive in 3014, I personally expect them to be used, and if there are still those that make the room

dirty then I will withdraw my request that the Dean allow smoking. Begging the question of whether smoking is a right or a privilege, all rights as well as all privileges entail responsibilities which cannot be ignored.

Micheal Rolle

Antical Surveys

The survey for the Math Society Anticalendar was to begin this Wednesday. The Society was hoping to make sure that over 90% of the classes were successfully surveyed. However, as of press time late Tuesday, some problems still existed. Copies of the survey that had been submitted to Graphic Services for duplication had not been returned. Apparently the list of classes prepared by the Math Society Antical Committee had a number of errors.

A problem with the Statistics Department was resolved late Tuesday afternoon. Faculty members had been unwilling to co-operate with the survey until Department Chairman J. D. Kalbfleisch received assurances from Gary Dryden of Mathsoc that comments of a racist, sexist, or derogatory personal nature would be deleted from the printed version of the survey.

At the Mathsoc meeting this Tuesday, amendments to the Antical questionnaire

## Coffee & Donuts needs help!
REMEMBER

All applications for the positions of manager and assistant manager for the *Spring and fall* terms this year **must** be in by 4:30 on Monday, March 15, 1976.

In case you forgot the address, here it is again:

C&D Manager
MC 3038
University Of Waterloo
Waterloo, Ontario
N2L 3G1

for the summer and subsequent terms were approved. Education Director J. J. Long presented these proposals under the assumption that the present questionnaire would not be greatly altered. It was feared that if the newly proposed Student-Professor Antical Committee failed to meet or reach an agreement on new questions, Mathsoc might be left out in the cold with the same questionnaire without any improvements. Gary Dryden hoped that this new committee, composed of two Faculty members and a majority of students, would reach agreement on a new questionnaire and on what type of comments would be considered non-beneficial to the survey and be deleted. It is hoped that this would be a check against any lawsuits or other undesirable or divisive action.

1

BURLOAF
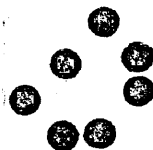
The following array of numbers is known as Sundaram's sieve. It is interesting in that if a number appears in the matrix, then one plus twice that number is composite. If a number does not appear in the matrix, one plus twice the number is prime.

4	7	10	13	...
7	12	17	22	...
10	17	24	31	...
13	22	31	40	...

....

The rows (and columns) of this sieve are generated by arithmetic sequences.

With all the preoccupation with metric measurements these days, I have the following observations.

There is no metric scale for measuring either angle or time. Someone told me that the official metric unit of angle measure is the radian, but this hardly seems to go along with the way everything works in powers of ten. One would expect the circle to be divided into tenths and hundredths rather than radians, of which 2π make up a full circle.

If we're going to go about making life easy, why don't we go further and change the base we use to base 12? Numbers represented in base 12 are quite a bit easier to work with compared to those in base 10. 1, 2, 3, 4, 6, and 12 divide 12 evenly; only 1, 2, 5, and 10 divide 10. Lots more things in our society come in dozens than in groups of 10. (Also, apparently, 6 fingers and 6 toes is a dominant gene for humans. The gene for 5 fingers and 5 toes is recessive. However, for some reason, it is vastly more popular.)

As mentioned before, Kelvin with 0 at absolute zero is more scientific than Celsius with 0 at the rather arbitrary temprature of water's freezing point.

This week we feature a **secret** INTEGER_OF_THE_WEEK. Here it is:

345532572678

Although the existence of this integer has been known for a long time, its exact value has only recently been discovered. All I can say is it took almost 3 weeks of processor time on a large computer to work it out. The meaning of this integer is soon to be made public, but until it is, I can say no more.

THE ANSWER BURLOAF

Dear Answer Burloaf,
    you silly mathie.
Consider a set of elements; we wish to discover if all elements are interesting. Suppose that only some elements are interesting and the rest are not. Then the smallest non-interesting element has the interesting property of being the smallest non-interesting element; this makes it interesting, so it can be transferred. Of the remaining non-interesting elements, there will again be one that is smallest—so by *reductio ad absurdum* you see that all elements of any set are, in one way or another, interesting. This applies to both finite and infinite sets. This is not an original thought (I read it in Scientific American) but I felt it my sworn duty to report it anyway.

Robert Fairbairn
Elec Eng '77
COMIT Research assistant

Dear Robert:
    Ah yes, a good point. However, you are making the rather unwarranted assumption that in the set of integers, there is a smallest uninteresting element. Now while the integers can be ordered, any subset of them need not necessarily contain a smallest element. Take, for example, the subset of the even integers. Therefore your proof falls apart if for any integer at all, there is a smaller integer that is not interesting. (Also, your accusation of me being a silly mathie makes the rather unwarranted assumption that I am a mathie.)

Dear Answer Burloaf:
    Regarding your column in which you stated that there probably doesn't exist an operation that is a predecessor to addition in that $a\# a\# a\# ... \# a\,(b\ a's) = a + b.$ I have found an operation '#'. It is defined as follows:
    $a\# b = a + 2$ if $a = b$,
    $a + 1$ otherwise.
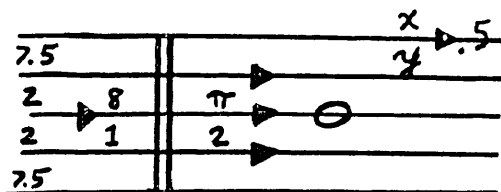   This operation works on the general case of $a + b$, and in particular, $2\#2 = 4$, as required for every operation in the addition, multiplication, exponentiation sequence ...

Bill Mills

Dear Bill:
    I'm impressed. Your operation works just fine subject to the condition that it must be used.
    Consider the following: according to the definition, $a + 1 = a$ (a repeated once), therefore $1 + 1 = 1$, or $2 = 1$.

Last week many readers were shocked to discover that their trumpets and clarinets had become obsolete.

Pandemonium!

However, the first of the new dis-tempered instruments to fill the void has been invented. I refer, of course, to the dis-tempered electronic slide helix.

This unusual(!) instrument has a structure like a piston, consisting of five circular surfaces on a rod, which is moved lengthwise in a tube. The edges of the circles make contact at five theoretically-discrete points along a continuous helix inside the tube. Adjustments of the distance between disks and manipulation of switches in the handle on the rod make possible a variety of chords and full-dekave changes; one sets the appropriate spacing for the tune to be played.

Volume and timing are controlled by the left hand, which supports the outer tube, while the right hand selects combinations of disks and moves the rod.

It is important to realize that the sound is produced electronically, based on the contact points between the disks and helix. This makes the dis-tempered electronic slide helix easy to synthesize with other electronic instruments; while various settings allow it to synthesize many existing instruments.

Another important advantage is that the notation which can be used would be easier to read than that presented last week. All you need to know is overall disk settings, rod position, disk combination, volume, and duration of each note. For instance, in the sample above, each bar consists of 8 beats, each 1 th. The upper disks are set 2 and 7.5 cm above the center disk and the lower two corresponding distances below. The first note is held for 2 beats at 3.14... volume, and is a chord played with the middle 3 disks. Since the chord is centered on middle I, the relative rod displacement is 0. The second is played with the top disk, so that the rod need only be moved .5 cm, instead of a potential 8 cm. *And so on.....*

Programs are already underway to convert your favorite pieces, with 480 mav recordings available soon. Watch this space for further developments.

Heard in a math lecture a while ago:

A mathematician was asked how to boil a kettle of water given an empty kettle. He replied that you fill the kettle and put it on the burner. *(Polite chuckles from the class. Prof ejaculates: No, this is not the fun part!)* Then the mathematician

'LETIX

JJBT Catastrophe!

Who knows what evil lurks in the hearts of sports officials? **JJBT** knows.

In last week's co-ed volleyball double knockout tournament, **JJBT** met the Science Society and uneventfully advanced to a second round match with the "Towers Terrors", a team which obviously stole its name from **JJBT**'s CN Tower Special. After the **JJBT** completion of that game, however, a routine drug test revealed that every member of the team had taken a cold capsule earlier in the evening. The team was immediately disqualified from further competition in the tournament, and victories were awarded to their opponents in both games in which they played.

Further disciplinary action was swift and harsh. The team was prohibited from entering the Olympic trials or competing in the Games themselves. When asked for his comment, Lord Killanin, president of the IOC, said, "I am naturally sorry that any team should be disqualified. It is some consolation, however, that less powerful teams such as Russia and Japan will now have a chance for the gold medal for which they had given up all hope."

Before we leave the subject of volleyball, I would be remiss if I did not point out the heroic efforts in the tournament of Catfish and Boon, who were both called for double-hitting or palming every time they touched the ball.

Since there is no use in crying over spilt milk, we will get on to other news. The road hockey game originally scheduled for this Sunday will be played on Saturday. To those of you who have already purchased your tickets, we hope there is no inconvenience involved in this switch—if there is, contact R. J. White (our opponent) for a full refund, as it was at his instigation that the date was switched.

And now for the news that you've all been waiting for—**JJBT** will be the University of Waterloo's official entry in the first Ontario University Frisbee Championships at Brock University on Sunday, March 28. We will be sending a Guts Frisbee and an Ultimate Frisbee team. However, we are short two players for a Freestyle team. If you are interested in representing your university in this event, please contact pcchynoweth, our UFO (ultimate frisbee organiser) or ocleibman via mail on TSS or through the Mathsoc office.

was given a kettle of water and asked the same question.

His answer: Empty the water out to reduce the question to the previous problem.

FED REPort

Federation council met last Monday. President Shane Roberts put forward nominees to chair three boards: Bruce Rorrison was approved to head the Creative Arts Board and Ralph Torrie was selected to head the Board of Publications, but Council tabled a motion to appoint Andrew Seibel to chair the Board of Entertainment. Doug Maynes was to have been appointed, but he withdrew his application and council wanted more time to examine Seibel's qualifications.

Council also cleaned up old business of the 1975-76 Council. This included a $5000 loan to a summer theater group to establish a professional theater group in the community.

Council discussed a housing survey to occur next week. Students who live off campus will be questioned about their types of accommodations. Also action regarding the high unemployment situation for students was discussed. A moratorium is planned for March 24 and a demonstration will take place in Toronto April 3. It is hoped more students will attend these rallies than in the past. This issue is crucial to students. Unemployment in the 18-24 age group is expected to be around 20-30% this summer. Many students will not be able to afford to re-attend school.

It is unfortunate that the Chevron still succeeds in misrepresenting facts. At the Federation General Meeting contrary to their report, I made *no* attempt to change the size of the Radio Waterloo Steering Committee or the RW Constitution. I tried to limit the number of Steering Committee members who could also sit on the Broadcasting committee in the Board of Communications bylaw. This was so Radio Waterloo people could not stack the board. I don't believe Radio Waterloo is synonomous with the Board of Communications.

I know from experience in other bodies (like Faculty Council) that discussion can be permitted on a notice of motion without the motion being moved at that time or voting occuring. Also, I find it quite inconsistent when Federation officials tell us before one meeting that bylaw proposals can't be amended at the meeting and then Shortall permits it at the next meeting. Despite accusations to the contrary, I had my motions well laid out and if the people who run the General Meeting had their plans well laid out there would not have been as many problems.

GRIDCO MMENT

This week we had 19 hopefuls in the running for *Gridword* solution! (Possibly owing to the inspirational nature of the namebox.) I guess that two weeks of mind-bending doughnuts have made our ordinary every-other-day type of *Gridword* seem terribly easy, but *don't believe it!* we only had *2 correct* solutions this week.

After careful consideration of a well-tossed, 2-sided coin, we have decided that the winner is

Peter Forde

The other potential winner showed up moments before the draw, to claim a T-shirt from previous weeks, so you needn't pity him, but as special compensation for being the only other correct solution, this week we are printing David Taylor's solution to the grid.

This week, too, we were back to that time-honored tradition of errors, but we had "Very few" Arguments. (Many happy Boomerangs to you, too, →boff).

This week's grid is by **Rob Tibshirani**. We now have enough *Gridword*s for the rest of the term; any that are not used this term will be saved for the next.

Across

A1 First year problems?
A12 .4999...
B1 spiked to 2B in 1885
B4 -1
B8 European Recovery Program
C3 Check the stats: there's two of them!
D1 Night bird
D11 Too good!
D14 Element LXX
E1 ardor
E6 tape spaces
E10 former Chinese chairman
E14 ceramic element
F1 ear shell
F7 in the direction of
F11 "___ ___ in the life ..."(2 words)
G1 tawny bird
G6+6G head
G9 your math rep
H3 72020305
H8 prime vowels
I1 uncle's brother's nephew
I7 top optimizer
J5 International Press Organization
J9 ancient Lebanese city
J14 lowest form of mathie
K5 javelin
K11 hard wood
L1 your math rep
L12 debark
M1 performer's reward
M9 abyss
N1 not always
N10 Adolf
O1 tend to change algebra marks (to the worse)

Down

1A prof <Princeton
1L Elles ___ belles!
2B see B1
2D You was?
2K machine
3C Putnam pro
3L hot sauce
4A girl's name
4E A clue?
4L 1010?
5A calla
5I flying flips
6G see G6
6J reversed aid
7C He's in 3 departments!
7I spelling champ
8A coagulate
8E lumière verte!
8H had French?
8K Tom Hall
8N ___-90
9A palindromic conjunction
9G reject your lover
9L ...6141.3
10A Toronto technical college
10G Caesar's month
10L swimwear put on backwards (sdrow 2)
11C he's the purist
11I anger
11M rich African
12C 'Hack'
12N hello
13A carbon
13F A apple?
13K WATMAP's "print" for example
14C astronomical opposition
14N after em
15A 4th tone
15D stinky substance
15I divorced!! (of all people!!)

This Week's

Name _____
Value _____
Attributes _____

Created by: G Submacaulay

Solution grid
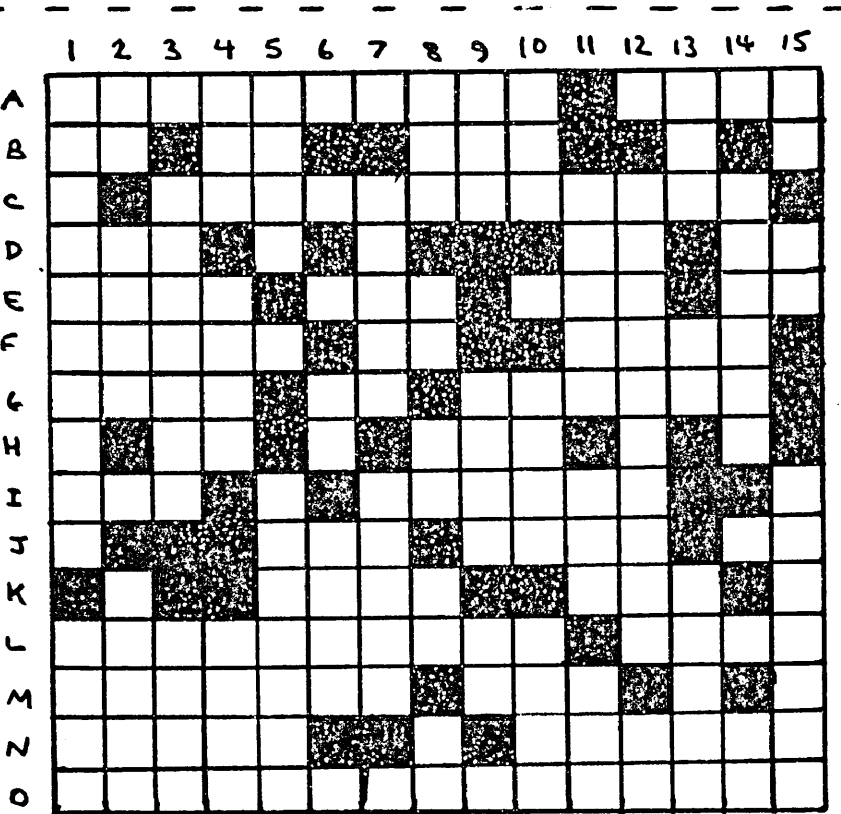
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
A	A	P	O	G	E	E		I		R	A	T	E	S	
B	V	I	P	E	R		A	N	C	H	O	R	S		A
C	A	N	T	L	E	R	S		H	E	E	D	F	U	L
D	T	U	I			U	N	I	O	N		U		N	U
E	A	P	O	T	H	E	O	S	I	S		A	B	E	T
F	R		N	E	O		W	A	R		I	S		E	E
G	S	Y	S	T	E	M	S			F			O	L	D
H		E		R	R		H	O	L	I	N	E	S	S	
I	P	L	E	A	S	E	O	N	E	S	E	L	F		L
J	A	L		H		L	E	E	S	H	O	R	E		O
K	D	E	L	E	T	E		L	A		N	O		O	N
L		D	I	D	A	C	T	I	C	S		N	P	R	G
M	G		P	R	I	T	H	E	E		E	D	I	C	T
N	A	T		A	N		A	G		O	N		C		O
O	S	M	E	L	T		N	E	B	R	A	S	K	A	N

It's a **Trob's** Life
or
Negative Life Lives!

After last week's letter from "Mantis Bacon", a further discussion of the game of Life would seem to be in order. The game, as played by the standard "Conway's Rules", took the computer world by storm about 1970 (give or take 1 or more years).

Some of our readers will be unfamiliar with the rules, so a quick review is appropriate:

The game is played on a grid of any arbitrary, not necessarily finite, size, referred to as the "Universe". Each square in the grid, known as a "cell", is 1 bit; i.e. it may be occupied or not. Each discrete time interval, known as a "generation", is represented by a bit pattern based on the preceding generation; that is, each generation is totally determined by the previous generation.

If a cell is empty, but has exactly 3 neighbors, it becomes occupied in the next generation. If a cell is occupied, 2 or 3 neighbors are required for survival; the cell dies of loneliness with 0 or 1 neighbors and of overcrowding with 4 or more neighbors.

An initial pattern is specified, and play begins.

A number of classic patterns with peculiar properties have been isolated in the range where the number of bits is less than ten. Some, like the Burloaf, are stable. Some, like the Glider, move through the universe in a fairly predictable way. Some, like the Eater, can destroy almost any other pattern. And a few, like the infamous r-Pentomino, simply grow without end.

Some interesting theoretical work has been done in Life. A CSC member has written a binary adder to run in a 200x260 cell universe. Others have suggested running Life on a color TV, using individual dots as cells. There is a rumor around that Von Neumann (surely everyone has heard of *him*!) developed a self-reproducing Turing machine in Life.

Life, however, has changed! (*Is nothing sacred?* —see last issue: 'Manipulation of Null Labels") After years of working with "two-state" Life (bits), it has become passé. Thus I am proud to announce the developement of the first "three-state" Life *(trits??)* here at the University of Waterloo.

This massive stride forward has been achieved by the introduction of "Negative Life". While bits may be 1 or 0, trits may be 1, 0 or -1. The necessary logic modifications are made by considering each cell's *net* number of neighbors.

So far, the only more or less working version of three-state Life is an experiment on APL/CMS, but most of the bugs have been ironed out and it should work properly soon.

It has been shown conclusively that the set of zits with Honeywell accounts is non-empty. To verify this fact, simply look in master/userids for something that goes with salt. (Hint: Start at the top)

To the utter astonishment of all concerned, the CSC actually went to the University of Toronto last Wednesday to see their graphics work. A combination of a color TV and a so-called "Graphics Wonder" connected to a PDP-11 running UNIX gives them a capability for animation and real-time display simply unavailable here.

Our *COMPUTER_OF_THE_WEEK* is the Minicomputer Lab's Nova.

The Nova has been used by fourth-year students to develop real-time control techniques, applying them to a model railway and slot-car track. Unfortunately, the Nova has been subjected to repeated vandalism, culminating in an incident last week when someone poured acid into it, doing damage so severe that it did not come up for ten days.

In view of the large amount of vandalism suffered recently, I am surprised to note that, rather than instituting a sign-in or lock-up policy on this lab, all four doors have been removed, including two previously unused doors to the central third-floor hallway.

Only one very short letter was received this week:

Letters to the **Trob**

Dear Trob:

Is it true that the cp in "cp disconnects" stands for "cer panek?"
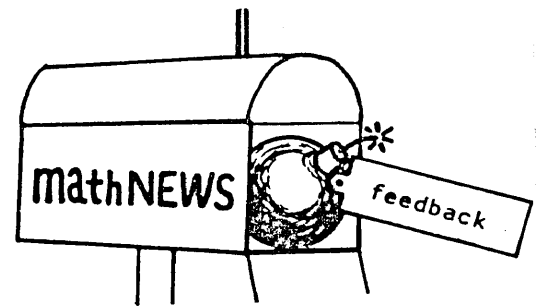
Joe Lifshitz

Dear J. L.:

Does it matter? Everybody seems to attach a different meaning to these letters. (I fell asleep on a CP once, on the way to Toronto......)

Exil Q. Trob

Suggests student guards

Dear **mathNEWS**, Burloaf, Exil Q. Trob, Editor, *et al.*:

In spite of the salutation this is really a serious letter. Concerning the so-called "Mad Creller", I wish to put forward again a suggestion which has been proposed by other people at various times and various levels of seriousness, that the Computer Science Club, and other associated hacks and zits (not to imply that the last two terms are mutually exclusive) as well as interested normal people, form a sort of voluntary "guard". This guard really need only consist of making sure there is at all times at least one person in or very close to each of the potential targets, e.g. the Nova lab, UNIX, the hack-room, the Telerays and even the old 2741/VC room, and any other unlocked, freely accessible places we can think of.

This would have a dampening effect on social life, as one of the hacks would have to stay behind while the others went for a j00s or to M0ther's or somewhere (s0mewher), but it is unfortunate that a person such as this can cause such problems. They are really minor compared to the other damage which has been caused though, aren't they? The fires set on the fifth floor would be harder to stop, especially since I have heard rumors that there are terminals of sorts up there and therefore a reason for people to go up there, but not in such a way as to keep constant guard. I don't know how much influence regular people would have on the policy makers who could implement a security guard (unless we did something radical like start a petition).

Furthermore, I put forward as a very serious suggestion the idea that **mathNEWS** especially, but also the other university papers, stop publicizing the actions of this person or persons, since it accomplishes little (the specific instances, I mean; it is good to have people aware of the fact that they are happening, but details are not necessary), and, in the case of a psychologically disturbed person, might, I think (although I know nothing about the subject of psychology), encourage them.

Sincerely yours,
Adrian R. P. Pepper

Gwoud Created by (?) jub waraulay

Metrician

Dear rssteiner and ocleibman:

In my humble estimation, there is either [1] a typographical error (not entirely unheard of), [2] an error in your conversion (likewise), or [3] a necessity to convert all present audio disk equipment to play your 380 mav recording of Beethoven's Ninth.

Investigation reveals that a standard LP (100/3 RPM) converts to 480 mav. For those interested in trivia, 45 RPM singles will be labelled "648 mav" and the now extinct (collectors notwithstanding) 78's convert to 1,123 mav!

As to the rest of the "homework", it is an exercise in futility. I'm sure most musicians will agree with me that the need for a vastly powerful and rapid calculatrix in order to translate the chart, somewhat defeats the purpose of sheet music.

Dis-tempering the vocal parts would eliminate the voice as a legitimate musical instrument, since very few of us are fortunate enough to be blessed with perfect pitch, and thus cannot make minute fluctuations of pitch under control.

I'm sure you agree that, although feasible, the system you have put forth is less workable than the present notation.

E. L. Burke

P.S. (1) No!

Dear E. L.,

First, obviously, you are not a musician. If you were, then you would have seen that some modern scores use pitches other than the standard twelve. Secondly, if modern trends in electronic music continue, the well-tempered scale will be rendered obsolete, as will well-tempered musicians.

Dis-tempering the vocal parts would have no effect on singers. Although the notation would change, all music written until now would remain the same. Composers, as a rule, have always written within the limits of the instrument being used. Thus the vocal limitations would be taken into account in the writing of the parts.

I must totally disagree with your last statement. The dis-tempered system can handle any music the old system handles. If you have played an instrument, you must realise that even the well-tempered variety can play notes other than the standard ones. However, under the old system, these notes cannot be used because of the notation. With the dis-tempered scale, these notes would be like any other.

It is clear to me that with the direction that twentieth-century music is heading, the only feasible system will be the dis-tempered scale.

The "380 mav" was neither a typo nor a conversion error—that is why question 1 was included in the assignment. Your calculations are all correct, I am glad to report.

Metric Editors

We've heard of it, too...

Dear mathNEWS:

While watching one of my grad student friends drawing pictures on the TEK, a certain member of the MFCF management was surveying the damage caused to the Nova, and not knowing who I was, but deciding I looked suspicious just standing there watching things the way I was, demanded, I am sure, to see my "userid card". I naturally did not understand what he was talking about, and visions of my account being liquidated immediately flashed before my eyes. I supposed this to be some new scheme implemented by the MFCF to keep track of who was using the Honeywell legitimately and who was not (that is, who was using it legitimately, not who was not using it legitimately [sic]).

After a couple of minutes of turning bright red, it finally became apparent that what this person wanted to see was, in fact, my regular University of Waterloo Student ID card. (I don't quite know the implication of the fact that after seeing it, he said that he had "heard of my userid"!)

<Name withheld>

course numbers as given in the calendar (with one correction, math 479a):

Renumbering of Mathematics Courses

In 1976, the Faculty of Mathematics renumbered its course offerings in accordance with the departments within the faculty. The abbreviated forms for the courses are as follows:

AM – Applied Mathematics
C&O – Combinatorics & Optimization
CS – Computer Science
Math – Mathematics
Mthel – Mathematics Elective
PM – Pure Mathematics
Stat – Statistics

Listed below are the old and new course numbers. The new Mathematics numbering system has been incorporated only in the Mathematics program section (Chapter 12). All other sections which show reference to Mathematics courses have used the old numbering system. The new numbering will be reflected in all sections of succeeding calendars.

Caveat Graphic Services?

Dear mathNEWS:

I noticed the letter in the "Sound Off" column of **mathNEWS**, February 27, 1976, concerning the Xerox copiers in the E.M.S. Library.

You may not be aware that the Library does not control or service the copy machines. This function has been taken over by the University's Graphic Services Department. We pass on to them all comments and complaints about the machines. A sign has been placed at the machines advising users that copying of certain types of material is not guaranteed. The Circulation Staff will refund money to a dissatisfied user. Should anyone have difficulty, would they please let me know? I am always willing to receive comments, complaints, and of course, compliments about the Library.

Very truly yours,
Caroline Presser,
Coordinator, E.M.S. Library

Bloodless non-event

Dear mathNEWS: "Blood clinic... CANCELLED" in mathNEWS... Is this true or is it a joke?

Ken

Dear Ken:

No joke—why would it be?

Editor

Service Courses

Old	New	
Math 12	Math	110
Math 21	Math	114
Math 22	Math	210
Math 25	Math	211
Math 31	Math	215, 216
Math 32	CS	210
Math 35	Math	212
Math 44	Math	414
Math 52	Stat	210
Math 73 a	CS	112
Math 73 b	CS	113
Math 73 c	CS	114
Math 73 d	CS	115
Math 81	Math	101 a, b
Math 82	Math	102
Math 83	Math	103
Math 84	Math	104
Math 85	Math	105
Math 100	Math	100
Math 122 a	CS	118
Math 131 a	Math	111 a
Math 131 a	Math	111 a
Math 131 b	Math	111 b
Math 243	Stat	204, 205
Math 253 a	Stat	202
Math 323 a	Stat	300
Math 450	AM	405
Math 515	Stat	500
Math 122 a	CS	118

Math Courses

Old	New
Mathel 101 a	AM 101
Mathel 101 b	AM 111
Math 112 a	CS 116
Math 112 b	CS 117
Math 119 a, b	Math 124 a, b
Math 120 a, b	Math 120 a, b
Math 122 a	CS 140
Math 129	Math 134 a, b
Math 130	Math 130 a, b
Math 132 a	CS 180
Math 132 b	CS 150
Math 201 a	AM 230
Math 201 b	AM 240
Math 217	Math 220 a, b
Math 219	Math 221 a, b
Math 223 a	Stat 220
Math 223 b	Stat 221
Math 225 a	Stat 270
Math 228	PMath 230
Math 229	Math 231 a, b
Math 233	Stat 230, 231
Math 234 a	AM 260
Math 234 b	AM 270
Math 235 a	Stat 273
Math 235 b	Stat 284
Math 236	Math 226
Math 237	Math 230 a, b
Math 239 a, b	C&O 239 a, b
Math 240 a	CS 210
Math 240 b	CS 240
Math 300 a, b	C&O 330 a, b
Math 301 a	AM 330
Math 301 b	AM 340
Math 307	C&O 337
Math 312 a, b	Math 322 a, b
Math 314 a	CS 370
Math 314 b	CS 371
Math 319	Math 321
Math 320 a	CS 330
Math 320 b	CS 331
Math 329	Math 331
Math 330 a	PMath 363
Math 330 b	PMath 362
Math 330 c	PMath 361
Math 332 a, b	Math 332 a, b
Math 334 a	CS 472
Math 334 b	CS 474
Math 335 a	Stat 373
Math 335 b	Stat 383
Math 336 a	Stat 374
Math 336 b	Stat 384
Math 338 a	Stat 350
Math 338 b	Stat 351
Math 339 a	Stat 340
Math 339 b	Stat 341
Math 340 a	CS 340
Math 340 b	CS 342
Math 341	PMath 341
Math 342	PMath 351
Math 343	PMath 352
Math 344 a	PMath 367
Math 349 a	Stat 331
Math 349 b	Stat 442
Math 351 a, b	C&O 351 a, b
Math 352 a, b	C&O 352 a, b
Math 353 a	C&O 353 a
Math 360 a	AM 362
Math 360 b	AM 372
Math 361 a	AM 382
Math 361 b	AM 395
Math 362 a	AM 365
Math 362 b	AM 371
Math 363	AM 361
Math 371 a	CS 369
Math 372 b	CS 360
Math 380 a	PMath 380 a
Math 380 b	PMath 380 b
Math 401 a	AM 430
Math 401 b	AM 440
Math 406	PMath 443
Math 407	PMath 464
Math 408	PMath 432
Math 409	PMath 462
Math 410 a	PMath 445 a
Math 410 b	PMath 445 b
Math 411 a	PMath 446 a
Math 411 b	PMath 446 b
Math 412 a	PMath 447 a
Math 412 b	PMath 447 b
Math 413	AM 461
Math 417 a	C&O 437 a
Math 417 b	C&O 437 b
Math 418 a	C&O 438 a
Math 418 b	C&O 438 b
Math 425	PMath 441
Math 426	PMath 467
Math 428	PMath 444
Math 429	PMath 466, C&O 439
Math 430	PMath 461, C&O 430
Math 432	PMath 452
Math 433	PMath 451
Math 434	AM 481
Math 435 a	Stat 474
Math 435 b	Stat 486
Math 436	PMath 430
Math 437 a	Stat 475
Math 437 b	Stat 485
Math 438 a	Stat 450
Math 438 b	Stat 451
Math 439 a	Stat 452
Math 439 b	Stat 453
Math 441	AM 465
Math 442	AM 473
Math 443	AM 485
Math 444	AM 495
Math 445 a	AM 466
Math 445 b	AM 476
Math 446 a	C&O 446 a
Math 446 b	C&O 446 b
Math 447	AM 486
Math 448	PMath 465, AM 482
Math 449 a	Stat 430
Math 449 b	Stat 431
Math 451 a	C&O 451 a
Math 451 b	C&O 451 b
Math 452 a	C&O 452 a
Math 452 b	C&O 452 b
Math 453 a	C&O 453 a
Math 454 a	C&O 454 a
Math 454 b	C&O 454 b
Math 455 a	C&O 455 a
Math 455 b	C&O 455 b
Math 456 a	C&O 456 a
Math 456 b	C&O 456 b
Math 457 a	C&O 457 a
Math 457 a	C&O 457 a
Math 457 b	C&O 457 b
Math 458 a	C&O 458 a
Math 458 b	C&O 458 b
Math 459 a	C&O 459 a
Math 459 b	C&O 459 b
Math 460 a	C&O 460 a
Math 460 b	C&O 460 b
Math 461 a	Stat 476
Math 461 b	Stat 480
Math 462 a	AM 462
Math 462 b	AM 472
Math 463	AM 488
Math 464 a	AM 468
Math 464 b	AM 478
Math 466 a	Stat 440
Math 466 b	Stat 466b
Math 467 a	Stat 454
Math 467 b	Stat 455
Math 467 c	Stat 332
Math 469 a	Stat 444
Math 469 b	Stat 445
Math 470 a	CS 476
Math 470 b	CS 478
Math 471 a	CS 450
Math 472 a	CS 466
Math 472 b	CS 464
Math 472 c	CS 462
Math 472 d	CS 468
Math 474 a	CS 446
Math 474 b	CS 454
Math 474 c	CS 482
Math 474 d	CS 484
Math 479a	CS 452
Math 479 c	CS 486
Math 480	PMath 470
Math 520	Stat 520

Remember "YAFI"?

The following communications were also found in **mathNEWS's** *mailbox on TSS this week:*

002 gsashby   wed march 3rd 12:16
so anyway, I just had to, didn't I? But just then the dragon reappeared at the door and proceeded to spaek in arabic. This was it. I slowly removed

072 gsashby   fri march 5th 13:42
dear sir
I most strongly request that you cease this unwarranted intrusion into my daughter's private life. Actions of this kind can only be referenced by one term: blackmail, an ugly word, I am afraid, but one that must be used in this situation. I can assure you that any further incursions on your part will be dealt with by the con-

stabulary, and that futhermore I will resist you ransom demands as long as there remains some form of decency in this country. I remain

anonymous.

073 ocleibman   mon march 8th 9:16
Decency was officially abolished in Canada at midnight yesterday. You consequently have no excuse to resist my ransom demands.

Signed,
A Friend

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Metric Electricity

There are 15 derived units in SI (*Système Internationale*) which have their own special names. Many of these units are based on the second, and must, consequently, be redefined for their proper metric units.

The SI unit of frequency, the hertz, has been discussed at length in previous articles.

We now deal with the units for electricity. The coulomb, the amount of electric charge carried by a current of one ampere for one second, will be replaced by the warmlomb (wa), the amount of electric charge carried by a current of one ampere for one third. Thus, 1 wa = .864 C. The unit of electric potential will be changed from the volt to the einstei (Ei). For those of you wondering about the choice of name, I figured that it was about time that Einstein had some unit named after him, but, since the last letter was dropped from Volta's name, it was only fair that the same be done to Einstein. Since electric potential is inversely proportional to the cube of time, 1 Ei = 1.5504534 V (approx.). Electrical resistance is also inversely proportional to the cube of time, so that replacing the ohm (which was always a problem anyway because its abbreviation is a Greek letter [Ω]) by the ouhs (ou) gives a relation of 1 ou = 1.5504534 ohms. The unit of conductance, the siemens (which is one reciprocal ohm) will be replaced by the tar (ta) which is one reciprocal ouhs. 1 ta = .64497254 siemens (approx.). The unit of capacitance (which is directly proportional to the fourth power of time), the farad (named after Faraday) will be replaced by the saturd (sa), where 1 sa = .5572562 farads (approx.). Power is not exclusively an electric unit, but its unit, the watt, is associated quite strongly in this area, so it will be included here. The watt will be replaced by the why (wh), and since power is inversely proportional to the cube of time, 1 wh = 1.5504534 W.

Not only electric units have to be redefined, of course. In all of the units mentioned in this paragraph, the unit is inversely proportional to the square of time, so the conversion factors will all be: 1 new unit = 1.3395918 old units The unit of force, the newton, will be replaced by the fig (fi). The unit of energy, the joule, will be replaced by the crown (cr). The unit of pressure, the pascal, will, of course, be replaced by the metrical (me) [notice to hacks—this means that mme is now a legal metric unit]. The weber, the unit of magnetic flux, will be replaced by the erb (er). The tesla, the unit of magnetic flux density, will be replaced by the banting (ba)—it's about time we put some Canadian content into SI. The henry, the unit of inductance, will be replaced by the O (abbreviated oh in order to avoid confusion with zero).

Homework

Last week, there was again a poor response to the homework. It was perhaps a little too difficult, so this week's assignment is much easier.

The lumen, a recognised SI unit, is defined as the luminous flux emitted in a solid angle of 1 steradian by a uniform point source having a uniform intensity of 1 candela. Why was it not necessary to invent a new unit to replace the lumen?

Look up the definition of lux (this is the last of the 15 units with special names). Is it necessary to invent a new unit to replace the lux? If it is necessary, give a name and definition for the unit.

The curie, a measure of radioactivity, has been defined as 3.700E10 disintegrations per second. The rontgen, a unit for measuring X-rays, has been defined as 2.58E-4 coulombs per kilogram. Give the new metric definitions of curie and rontgen (N.B.—they do not require new names).

How many kilowhy-myths in a kilowatt-hour?

What is the weight, in figs, on the Earth of someone with mass 60 kg?

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