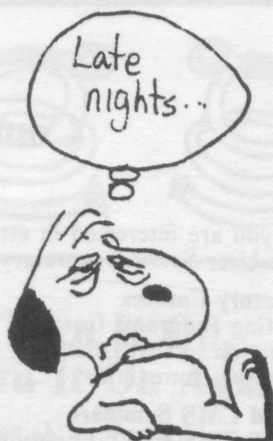


Descartes Meeting

A Rene Descartes Social Evening is to be held on Wednesday, October 15, 1980 commencing at 8 p.m. in MC 5158 with a presentation by Dr. Richard Anstee entitled "(0,1)-Matrices". Dr. Anstee, an alumnus of this faculty, was a member of the successful 1974-75 and 1975-76 Putnam Teams. He is now a Post-Doctoral Fellow in the Department of Combinatorics and Optimization. All Rene Descartes Fellows past and present are invited to attend. Refreshments in MC 5136 will follow.

Volume 24, Number 4
Friday, October 3, 1980

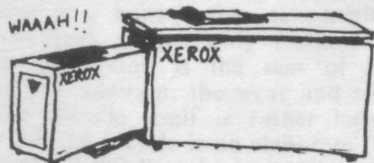


Golden Ratio Contest

Ever since the Greeks came up with the Golden Ratio, it has been used - and discovered - in the dimensions of various objects. However, it has proved useful in more than designing temples; it is useful as a mathematical constant as well. As such, it must be defined. The object of this contest is to find the greatest number of *correct*, elegant definitions of this constant, where elegant means simply that there are no more than five variables total, and not more than two divisions. Rationals may be used, but approximations of irrationals may not. If a tie results, the entry with the least total variables will win.

Sean Richardson

math NEWS



Every once in a while, as the need arises, the Computer Science Curriculum Committee meets. It is responsible for recommending curriculum changes in Computer Science to the Math Faculty Council. The last meeting of the Committee was on Thursday, September 18th. At that meeting several changes were approved and some interesting topics were introduced for further discussion.

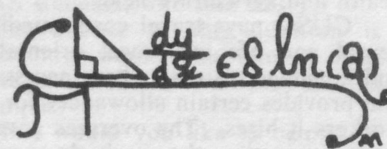
First, the changes: CS 331 (Computer Applications in Business: Data Bases and Communications) will become CS 338, with the same title. Instead of two lecture hours a week, there will be three and it will be open to all general students, not just students in the CA option as 331 was. In addition, whereas CS 330 was the sole prerequisite for CS 331, either CS 330 or both CS 180 and CS 340 are the prerequisites for CS 338. As one might expect, the aims of the course remain the same, but with the extra time available, more material will be covered.

Computer Science Curriculum Committee

CS 473, a new course in Numerical Linear Optimization, was approved. The course's objectives are to 'explore linear and piecewise linear optimization algorithms and the numerical techniques which are commonly used in their implementations' and is aimed at CS, C&O, Statistics and Engineering students interested in mathematical optimization, numerical methods for linear programming, least squares techniques, and data fitting techniques in general.

Note that these changes must be approved by Faculty Council before they can be considered absolutely approved.

The Committee will consider some important topics in the near future. Firstly, **should there be a firm policy on final exams?** Currently, professors are free to give "finals" on the last day of class or to have them scheduled by the registrar. Secondly, **should there be honours and non-honours sections of crowded classes?**



Finally, some CS courses are known as having a very large workload. CS 488 (Graphics), CS 452 (Real Time Systems), and CS 444 (Compiler Construction) come to mind as good examples. **The Committee is considering increasing credit offered for such courses, to be more in line with the amount of work performed.** The amount of extra credit is up for debate, as is whether or not the courses should be split into "Class" and "Lab" courses.

What do you think of these three topics? You have a voice on the Committee, through myself if you're an undergraduate and through Dave Martindale if you're a graduate student. Comments may be sent to mathNEWS, MathSoc, via Honeywell mail, or care of the Computer Science Department to either Dave or myself.

peter rowley

Want a challenge? Try to memorize as many digits of $e^{i\pi}$ as you can....

CUSO Meeting

David Ozolua will be in Waterloo on Tuesday, October 14 to talk about the CUSO Nigeria programme. He will also be looking for recruits who would like to work in Nigeria for two years. The meeting will be in MC 3009 at 7:30 p.m.

David began his employment with CUSO as a secretary after completing a commercial course at College. He is now a Field Staff Officer working out of the Kaduna CUSO Office. His duties involve selection, placement, and support of 40 volunteers in northern Nigeria.

In August, seven Waterloo graduates left for two year assignments in Nigeria. They will be teaching math, science and english at Secondary Schools and Teacher Training Colleges. One will be teaching radio electronics at a Technical College.

The CUSO programme in Nigeria is the organization's largest single country programme and has been operating since 1962, mainly in the field of teacher placements. Science, English and Math teachers are in particular demand, along with teacher trainers. A strong effort is now being made to programme in the technical, health and agriculture fields.

CUSO pays travel costs; medical, dental and life insurance; orientation and language training where necessary; and provides certain allowances for the workers it hires. The overseas government requesting the worker's services pays salaries at local wage levels and provides furnished housing.

For more information, and to arrange an interview with David, please contact Kerrie Strathy, Waterloo CUSO Co-ordinator, SCH 234A, extension 3144.

The Canadian University Service Overseas is an independent, non-profit, development agency which sends skilled workers overseas to help the nations of the Third World train their people to cope in a fast-changing, technological world.

Set up in 1961, it originally recruited mainly young, university graduates. Now, as the needs of developing countries change, it has more requests for volunteers skilled in trades and technology. Age is no longer a barrier; many volunteers have years of experience to contribute as well as basic knowledge.

In the past 19 years, CUSO has sent 6,000 Canadians to 65 different countries. Most are posted overseas for two years and are paid counterpart salaries by the host country or agency. CUSO pays health and life insurance costs, return airfare and "settling in" and resettlement allowances.

Computing Services Courses

If you are interested in attending any of the courses outlined below, please contact the User Services secretary, MC 2061, extension 3271.

Introductory Courses

Converting Programs from OS to CMS	Oct. 3
Introduction to CMS/SPSS	Oct. 6
CMS Batch from Cards	Oct. 27

Advanced CMS Seminars

Tailoring CMS EDIT Environment	Oct. 10
Techniques for FORTRAN Programmers under CMS	Oct. 15
CMS Batch	Oct. 17
CMS EXEC Files	Oct. 20
Techniques in CMS	Oct. 23
Use of Tapes through CMS	Oct. 24

Introductory Statistical Packages

Introduction to SPSS	Oct. 7, 8, 9
Introduction to BMDP	Oct. 14, 16
STPACK	Oct. 21

Text Processing Courses

Tailoring SCRIPT Documents	Oct. 14, 16
SYSPUB: A Text Formatting Aid	Oct. 29

Programming Languages and Packages

Introduction to FORTRAN	Oct. 2, 7, 9
CalComp Previewing Package	Oct. 22
Introduction to BASIC	Oct. 28, 30

The following will be offered as on-request demonstrations.

Introduction to CMS for FORTRAN Programmers
 Introduction to CMS for Text Processing
 Introduction to CMS for Statistical Analysis
 Introduction to Script
 Use of Tapes through CMS

If you are interested in any of these demonstrations, please call Shirley Fenton, extension 2444, to arrange a suitable time.

CUSO

In the coming year CUSO will be sending 400 volunteers overseas to help in the fields of education, health, agriculture, business and technology including engineering and auto mechanics. Any skilled worker who is a Canadian citizen or landed immigrant can apply through a CUSO Local Committee.

CUSO also undertakes projects within Canada to increase public awareness of development issues and will help groups wanting to organize education projects. And it provides financial and material support for specific development projects initiated and directed by Third World agencies. Funds come from governments, business, groups and individuals across Canada.

Coming Career Events

The Department of Co-ordination and Placement serves all students in all faculties of the University of Waterloo by offering information and counselling on career selection, job application and interview preparation. It also co-ordinates the interviewing of graduating students seeking full-time employment.

Staff are available to help students relate their academic programs to career possibilities; to discuss strategies for an effective job search; and to provide information about various careers. Group sessions on effective job search techniques are conducted throughout the school year in various campus locations. Career information talks are held in the fall months each year, during which selected representatives from many organizations are invited to talk with

The Trials and Tribulations of Cycling

Pity the poor cyclist - his lot in life is not an easy one by any means.

The first problem facing the bicycle enthusiast is the weather. First off, there's the cold; even during "cycling season" (which is somewhere between April and November, upper and lower limits dependent on the hardness of the cyclist and his willingness to punish his bike) it gets pretty cold at times; and it feels colder on a bicycle, since the wind seems to blow through you rather than around you. Also, there are the various forms of precipitation: rain, snow, sleet, hail, mud, etc. All of these foul up the bicycle, as well as ruining the appearance of the owner. Rain is also a hazard, as anyone who has bicycled knows; bike brakes don't work as well when they're wet, due to the decreased amount of friction, and the result is an astronomical increase in stopping distance and, possibly, a dented front wheel. Finally, there is the wind, which can make pedalling a Herculean effort.

Another problem with cycling is the condition of the roads. A pothole which is a minor irritation to the driver of a car equipped with the best of modern shock-absorbing suspension systems is a bone-jarring nuisance to the bicyclist, whose only method of shock absorption is the seat of his pants. In addition, the wear and tear on the bicycle itself is rather large; after all, the bicycle is an elaborate yet sensitive machine, and constant pounding will damage it.

These, however, are minor problems. The biggest danger inherent in cycling is the automobile. First of all, there is the weight ratio. A car weighs several tons, whereas a bicycle weighs but twenty-five or so pounds. (No, I don't know exactly how much - have you weighed your bicycle lately?) A collision between the two will definitely cause more damage to the cyclist. And if you think cars are bad, what about those huge **<expletive deleted>** trucks? You only have to be passed by one of those monstrosities once to be sent fleeing to the sidewalks in terror; believe me, being on eye level with sixteen huge wheels is unnerving, to say the least.

So what can a safety-minded cyclist do? Since most areas do not have special bike paths (and they should), there are only a few things that the prudent cyclist can do to protect himself. One of these is to ride on side streets whenever possible. The speed limits are lower and there is less traffic; it is much safer. But the best advice is to **WATCH OUT** - car drivers are a bit nutty at the best of times and can't be counted on to behave sensibly.



Turn It On, Turn It On Again

"Tonight's presentation of Crime and Punishment is brought to you by Meretricious Industries."

The screen is filled with a close, head-and-shoulders shot of Howard Sturgis, Chairman of the Board of MI.

"MI is a diverse company. We're involved in exploring the oceans' depths, to bring mineral wealth to the land where it can be used to help us solve the energy crisis, and to feed more people than we've fed before. We're involved in space research, harnessing the unique properties of outer space to manufacture materials never dreamt of until recently. These materials will give us stronger, lighter automobiles, energy-efficient appliances, and precision life-saving instruments.

"But our many interests don't make us forget our employees. They've been good to us and, by gosh, we think we've been good to them. They're 12,000 strong and we hire more everyday.

"Still, we never forget that this is North America. And to survive in business, one must make hard decisions. And we can't afford to be friendly to our competitors; they're ready and waiting to serve our markets if we slip up.

"So at MI, we're careful. We keep our wits about us. We look for new opportunities, and rising dangers. And we're careful about whom we deal with and whom we hire. Because we aim to survive the 80's and beyond.

"Yes, at Meretricious Industries, we're working to make the future better for us.

"Enjoy the show."

thomas s. eiselbaum

There are many ways in which bicycles can be hazardous to your health; however, despite all the hazards, I for one will keep on cycling - after all, it is fun, it keeps me in shape and I get to classes a lot faster than I do if I walk there.

David Till

FASS The Name Says All

I have been asked by ye editor to say a few words on behalf of FASS. [Big sigh, sounds of perturbation.]

FASS, as I have been told, stands for Faculty, Administration, Staff and Students. It is these four groups from which the cast and crew of each year's FASS are taken. Unfortunately, over the past several years, the people in FASS have been more frequently from the groups, Alumni, Staff, and Students, which is not the most complimentary of acronyms. Thus, we retain the name FASS, and have done so for 18 years now (personally, I wonder what has been here longer: FASS, or Village food).

At the time of the writing of this article, the clockwork for the next FASS show has begun turning, and a new FASS show is being conceived.

But we need YOUR help. We are always looking for new talent to turn loose on the masterful script (koff, koff), and we need new talent to write said masterful script.

"But", say you, "what do I get out of this?" [That's a good question. I don't know the answer.] [Quick, all you AS students, who said this?]

The answer to this question is simple: how would you like to help present one of the funniest productions on campus?

How would you like to belong to a group with one of the largest party budgets on campus?

How would you like the chance to make a fast grab at Laurie's backside [or Roy's if you prefer]?

If any or all of these options appeal to you, as I'm sure the last one appeals to Roy, then come out to the next FASS meeting. All you have to do is show up, meet the people, and enjoy yourself. If you don't think you have the time, no problem; if you want to join us, great [all we ask is your first-born male]. (*female too -typist*)

I hope by now everyone reading this article can hardly wait for the next FASS scriptwriters meeting [the last one was Sept. 30]. To give you something to think about before the next meeting, the theme for FASS '81 is spies and spy films. All right, on the count of three: one, two three: dum-de-de-dum-dummm-dum-dum-dum, dum-de-de-dum-dummm-dum-dum-dum, dum-de-de-dum-dummm-dum-dum-dum, dum-de-de-dum-dum.

na-na-na-naaaa-na-na-naaaa.



Monologue with Brad Templeton

Due to the mathNEWS policy of providing equal time for opposing views, the following column is printed, as there will surely be people with opposing views.

Despite the fact that I asked for comment on my last column, somebody actually did write something about it. Well, gentle reader, this is not to be stood for, and thus deserves a reply:

William Hughes does have something of a point concerning participatory democracy. Information gathered both by pollsters and people living in the world does seem to indicate that the majority of the voting public are not very well informed. Because of this, it is suggested that the public would run a society with an even greater degree of incompetence than the politicians they vote for do. Much to our chagrin, we do not live in a society where participatory democracy can work, and thus it has to (temporarily, I hope) be classed as idealism.

What I suggested last week, however, was *not* truly a participatory democracy. There were several important differences. First, only a certain select set of issues were decided by the taxpayer in my system. The politicians were not removed from the legislative process, and were allowed to campaign and legislate as much as they desired. The will of the taxpayer would only be enforced on issues not dealt with by the politicians. Should Parliament desire to double the defence budget, there would be nothing the public could say about it until the next election.

A second important difference lies in the fact that my system was not a truly democratic system. Unlike the democratic ideal of "one person - one vote", my system was a "one tax dollar, one vote" system. (This did not make it a "fascist" system, since issues like welfare, jobs, etc. are still decided by the one person, one vote system.) Thus the voting on minor government spending would be done by an informed group of voters, that is to say, a group informed enough to have been financially successful in the world. Under my system, voting your tax money was not at all a required duty, and the apathetic taxpayer would not normally vote.

At any rate, the purpose of **Monologue** this week is to try and examine some of the ramifications of existing in an apathetic society, especially on the university campus. We claim we live in a free society, and such freedom must include the right to be apathetic about it. While one may want the government to be there so it can provide various services, one might not wish it to be making moral and foreign policy decisions for you.

The group I wish to lambaste is our Federation of Students. I am a member of this federation because it provides me with such services as Fed Flicks, buses to Toronto, various CC offices such as the legal aid, the publications and entertainment through public functions and clubs. I am **not** a member because I wish to be represented to the government of the province, nor to participate in OFS, hold fee hike strikes or protest the selling of compilers to the CIA. The simple fact is that in the majority of cases I have not agreed with the council of the Federation of Students when it has taken stands in the name of "students at the University of Waterloo".

The sad point is that I have no effective way of showing the Federation that I don't want to be politically involved with them. If I withdraw my fees, then I must pay more for various services that I do participate in. If I join their council or attend its meetings, I simply become one of the involved members that sets up policy for others, in addition to using up time that I may be able to put to better use. It ends up that good services and political representation come as a package deal, and there is nothing one can do about it.

As students at a major university, we are one of the most well educated large groups of people in the world. Because of this, it has been my observation that people here have very diverse opinions. We study in dozens of different departments, and have hundreds of different sets of plans and goals for our futures. People come

here from families in all walks of life, with philosophies from all parts of the political spectrum. In addition to this, if voter turnouts say anything, most of us don't care about the political side of the Federation of Students. My question is: How can any group claim to politically represent the community at this university? Why does some group feel that it has to do this?

There is no doubt that large groups of people here do want to voice their opinions. Perhaps one thousand (around 5% of the total population of this community) are in favour of a tuition fee increase strike. Does this mean that some group, designated as spokesmen, should be able to state that University of Waterloo students wish to hold such a strike? If they say this, they are wrong, for all a Federation councillor can truthfully say is: "Around 10% of the students in my faculty voted for me, and with that mandate, I have voted in council for a fee hike strike."

The bottom line is that the low voter turnouts for our Federation do not give it a right to represent us politically. Nowhere is it carved in stone that a student organization that encompasses all students must take stands for them on issues. Some may want this, but I certainly don't, and wish that I could refund the part of my fee that goes to OFS conference attending, fee hike strike posters and \$3,000 advertisements. Not only do I feel that the Federation of Students represents us poorly, I also feel that it has no *right or need* to represent us, simply because we are not a representable group.



Wanted

A tutor for second-year Calculus, general. Integration, derivation with two variables. Contact Drew at 578-6271, or dpost on the bun, or leave a message with the Math Society. Salary negotiable.

Tutor Required

A tutor is required for a grad student taking REC 270 (a course in basic stats). A good knowledge of statistics and good teaching ability are needed. Pay offered. Contact Chris at x3894 or 576-6922.

Day	Event
Friday *	3 OKTÖBERFEST 10 STAMPS
Saturday *	4 Fed Flix "Cruising" Fed Flix runs 3 days
Sunday *	5 Tennis Singles
Monday *	6 Transsgiving HOLIDAY!
Tuesday *	7 Chinese * Magic * CIRCUS 8:00 pm → Humanities mathNEWS production night!
Wednesday *	8 CINEMA GRATIS! CAMPUS CENTRE CINEMA gratis! - campus centre!
Thursday *	9 Best of the Cannes Festival - Humanities Theatre. Chive '80 (+9)
Friday *	10 Fed Flix runs 3 days
Saturday *	11 LONG WEEKEND! WEEKEND FILMS! No Fed Flix!
Sunday *	12
Monday *	13 GET WORKING! Mid-terms sneak up on you!
Tuesday *	14 CO-OP interviews START mathNEWS production night - Come VISIT!
Wednesday *	15 CINEMA gratis! CAMPUS CENTRE
Thursday *	16 ANNNA WYMAN DANCE THEATRE (from Vancouver) HUMANITIES THEATRE.
Friday *	17 OKTÖBERFEST ENDS 80000000
Saturday *	18 Fed Flicks: Monty Python's LIFE OF BRIAN 3 days
Sunday *	19
Monday *	20 Are you a "PPFF"?
Tuesday *	21 mathNEWS Production night.
Wednesday *	22 CINEMA gratis! CAMPUS CENTRE
Thursday *	23 HALLOWEEN! Tomorrow! Get your pumpkins ready...!
Friday *	24 Shaw Festivals DEAR LIAR 8 pm. Humanities
Saturday *	25 Eric Donkin in THE WINDMILL WOOD OF SAGHAM GUNDS 8 pm - Theatre of the Arts. Fed Flicks: AND JUSTICE FOR ALL 3 days
Sunday *	26
Monday *	27 GET WORKING! Mid-terms sneak up on you!
Tuesday *	28 mathNEWS production night.
Wednesday *	29 CINEMA gratis! CAMPUS CENTRE
Thursday *	30 HALLOWEEN! Tomorrow! Get your pumpkins ready...!

BADGER

Even after repeated attempts to avoid having to write something for the upcoming (this) mathNEWS by claiming to have nothing to comment on, here I am. The prime suggestion being to blabber on about anything I can fill space with, like this header.

I found in my 'bun mail.box just now a message from a math fed rep telling me that my big chance to instigate change in the federation has arrived. That now the lunatic fringe that organized that big fiasco (the aborted fee hike strike) wants my opinion on what they can do for an encore. What can I say but --- 'As if I care!' The feds have been ignoring common sense and jumping onto the bandwagon of any fool cause (if it is controversial enough) for as long as I can remember. That is, when they aren't the centre of the controversy themselves. In the time I've spent here from '74 to the present, the feds have constantly squandered the money I'd foolishly never bothered to get refunded. Classics such as their long fight with the AIA (my involvement, unfortunately, being consummated in the days when fed elections were heavily contested), to the fight to destroy the Chevron (the former student newspaper), all the way to the large amount of money to foolishly oppose a very reasonable increase in tuition have convinced many people that the feds have only one real purpose -- the supply of entertainment (BENT).

This is, of course, not to say that all the lunatics are involved in student government; the southeast corner of the third floor of the math building (MathSoc, CSC, C&D, etc.) has recently acquired a new fringe element. Those accustomed to this area, or at least using the lounge, have undoubtedly noticed a new breed of animal closely resembling a student but with a coloured band around one of its arms or legs. While certainly we have to admit, that with their purple, red, orange, gold, or yellow stripes they are a spot of colour in a drab background (anything seems bright compared to a concrete building!), they are also dangerous. Nearing one another they promptly enter into a strange mating ritual where they immediately draw their arms and shoot one another (dart guns fortunately). There is even a hierarchy as to whom any combatant can shoot, with the rules containing varying states of death. Gee whiz, is D&D entering the real world? And who knows what will be next. Broadwords at five paces?

Particularly noticable this term has been the re-emergence of mathNEWS. This is due largely, so far as I can ascertain, to a certain female task master who takes the obligation of soliciting (sorry, the sentence doesn't stop here!) articles in a very zealous manner. It gets to be a little tedious at times being bothered by the same question, but at least it's enthusiasm that hasn't been seen in some time around here. Keep the faith kid!

And just to prove that this writer is equally as much of a lunatic as the rest, I would like to point out that the broomball season is just around the corner (a couple of weeks) and assembling a winning team would really be great. A fair number of mathies must have played hockey sometime in their illustrious careers and these are the kind of people we could really use to put together a good team (how can you people ignore a plea like this????).

In the place of an old institution I would like to present the real_of_the_week. Introducing

π

The number, of course, has been heavily investigated and has a number of interesting properties, but I don't feel like writing anymore. So, suffice it to say that this is dedicated to the popular π buttons hopefully available at MathSoc again some day.

The Government

For those of you that hate serious-minded writing about politics and have got past the title of this piece, rest assured that this is not a political article at all but a musical article.

The Government is a band from Toronto which looks at the world around it in a slightly different way than you or I do. Consider these lyrics, from the song "On The Prowl":

*Hey, everybody out in the street driving cars
I've just got one thing to say to you
And that is:
I can get where I want to go on my feet
Faster than you can do likewise in your cars
Do you know why?
It's because your cars are all stuck at
some kind of intersection
It's utterly irrelevant which intersection
Because all the intersections of the world
are identical...*

Most people don't really see it quite that way. (If you do, perhaps you should see your doctor...) But then most people haven't written songs with such titles as "Telephobia", "Zippers Of Fire" and the ever-popular "Hemingway Hated Disco Music".

It is safe to assume, therefore, that the Government is not a band trying to appeal to the masses of average listeners. For one thing, there's the music. Guitarist Andrew Paterson usually tries his best to distort his sound up to the threshold-of-pain level; that, combined with Paterson's and bassist Robert Stewart's singing, is usually sufficient to send many people running for cover.

However, the band has a lot of good songs. One, whose title I do not know, is based on George Orwell's "1984"; specifically, on the scene in the "Ministry Of Love" between Winston Smith and his Party tormentor, O'Brien. Set to music, this becomes an interesting listening experience. Another song, entitled "I Feel Like A Beer", contains the following lines:

*The TV set is on
It looks like the hockey game
People seem to like it
But I don't really care
But I mean the people get excited
In fact, they get drunk!
It must be patriotic
To have your favourite team...*

A lot of the Government's songs, such as the one above, can be thought of as having been written from the "Man From Mars" point of view: that is, a view of our society as a complete outsider might see it. Some of their songs can, in fact, cause the serious listener (assuming such a person actually exists) to stop and think. (shudder...)

However, I still do not completely understand how their minds work. For one thing, they have a strange obsessive hatred of telephones in general and Bell Canada in particular; also, there is their appearance, which can best be described as a cross between that of the Busy Executive and that of the Borderline Psychotic. Still, it is enjoyable listening, once you get used to it.

For those curious enough to want to pick up on some of the Government's recorded material, the band has (as far as I know) one single ("Hemingway Hated Disco Music"), one E.P. (containing "Flat Tire", "Sponge", "Get You Sleeping" and "Zippers Of Fire") and an album, "Electric Eye", which is a recording of an audio-visual presentation by the Government and Michael Hollingsworth. In addition, there is a new album coming out which will be in the stores soon, if it isn't there already.

Interaction

Some of you may have first heard of the Bavarian beer festival of Oktoberfest from last week's news accounts of the terrorist bombing by a neo-nazi group that killed twelve people at the German Oktoberfest (which is really a Septemberfest) in Munich. Hopefully such things will not occur when the Kitchener-Waterloo version of Oktoberfest begins next week. I can understand the concern and fears that many people have about such fascist and racist groups like the KKK and the Western Guard. Hopefully we can prevent these ultra-right wing groups from gaining support, as I'd hate to see such terrorist acts in this country. However I must add that little good comes from terrorism, whether it is from the right or the left, and whether or not the state condemns it or sanctions it.

However, enough comments on terrorism for now, I'd like to talk about the local version of the Oktoberfest. The most likely dangers to occur then are accidents from drunken drivers, fights between rowdy drunken patrons, and the sickness of patrons brought upon by the poor mixing of certain foods and drinks.

The K-W Oktoberfest is much younger than the Munich one. It began in 1969 as a four day affair and in 1971 grew to its present length of nine days. It begins the Friday before Thanksgiving Monday and ends the

Saturday of the following weekend. There are a number of certified drinking halls set up in arenas, and large halls (some run by Kitchener's traditional German clubs) and many local merchants make large profits during this period.

That is not surprising considering the cover charge to enter these halls is in the five dollar per person range. The price of beer, liquor, and food is likely to be above normal during this period. The places are usually sold out and more is drunk and eaten by the patrons than is usual. Also the beer halls sell a number of Oktoberfest souvenirs for high prices. (The green Tyrolean Oktoberfest hat is considered *de rigueur*). Add to this the filled-up motel and hotel rooms during this period, and tourist shopping in the city stores, and you see that "Ein Prosit" adds up to "I Profit" for many local merchants.

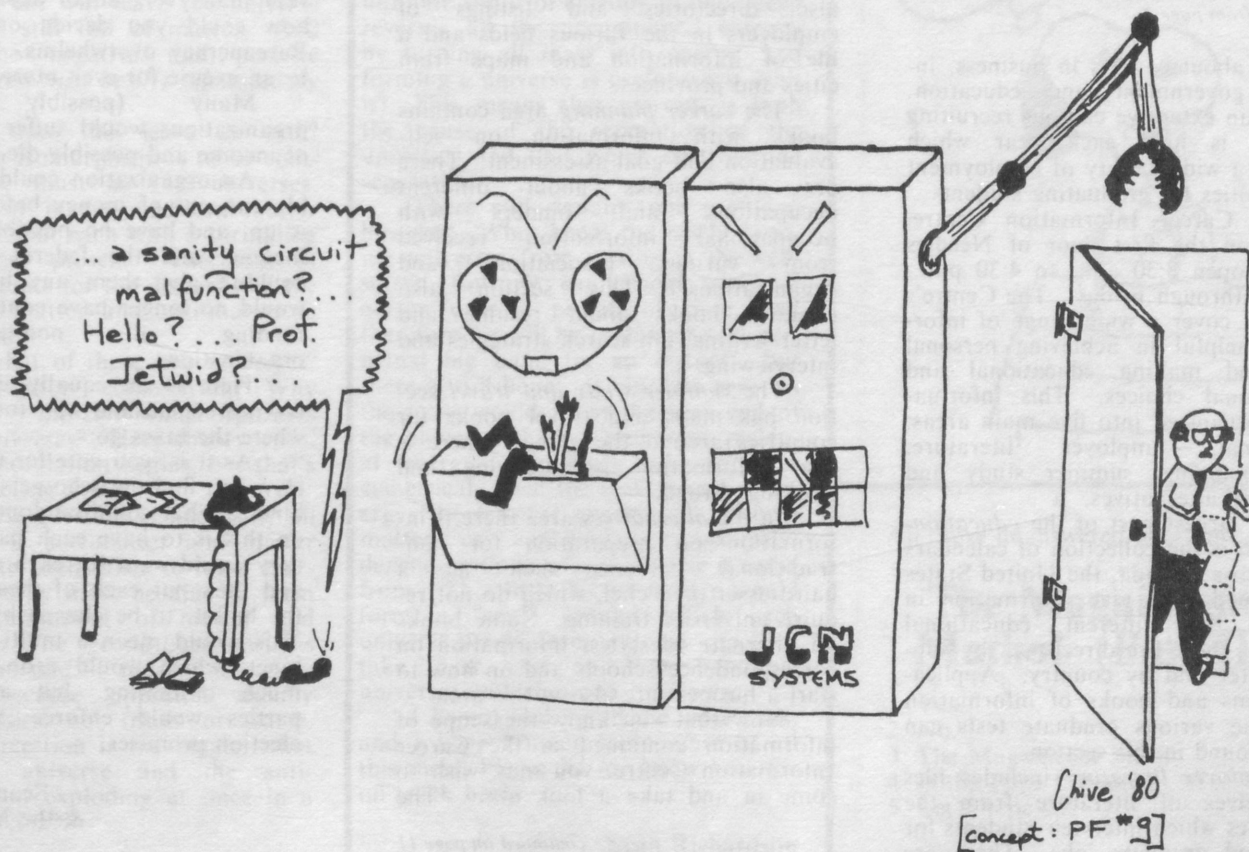
Aside from the old-time German people who usually attend Oktoberfest at their own clubs, the local populace aren't the mainstay of this event. Most of them have been to Oktoberfest once or twice, but don't make it a yearly trip. Generally the money comes from tourists (from Canada and the U.S., and, yes, some from Germany) and (you guessed it) university students. These students don't just come from Waterloo and Laurier; such schools as McMaster, Brock, Guelph,

Western, Windsor, Toronto, York, and Ryerson are represented.

Oktoberfest may not be for the serious quiet drinker. If you attend the Oktoberfest, you will probably have to sit on long wooden tables in a cold noisy arena. Usually you will be entertained by a German-style "Oom-Pah-Pah" band(s). So a liking (or at least a tolerance) of polkas is required. A loud voice would also be expected as you are expected to stand and sing the Oktoberfest anthem of Ein Prosit about every half-hour. Also it would be helpful if you would like German food such as sausages and sauerkraut.

If these things are what you are looking for, you will probably have a good time at Oktoberfest. However if you are into a quieter time, either stay at home or look hard for a non-Oktoberfest local bar. I've been there (to Oktoberfest) a few years ago. I had a good time the first few times, but I'm tired of it. I will probably not attend this year. If I am not out of town I'll be staying home or visiting some quiet place. If you go please be careful. Don't get too drunk and try to be restrained. If you've had too much don't drive. I don't want to see anyone hurt, nor do I want my power knocked out by some car crashing into a hydro pole (as it has happened before).

J.J.



Young Frank Einstein

Listening to your Salad

Ever listened? Have you heard noises from among the watercress? If you have, and if you've watched American TV, you doubtless realize that all good salads cry for Pfeiffer. Actually, they don't cry very loudly, they sort of moan, and if their desire is placated, they sigh with vegetable gratitude.

If you think all this is crazy, think back to the time when your very own cat Bosworth stood up and went chow-chow-chow. What a scene that was, just sort of right there in the middle of the room, he went chow-chow-chow. You were so amazed, and yet, after watching the ad, it didn't seem like such an unreasonable occurrence, did it?

Nor did the time when a small one-horse outboard boat appeared in your toilet tank. Or when the chuck wagon made muddy tracks in your freshly waxed kitchen floor. Especially when those great big fruit appeared from your undies. Yes, especially that one, it was genuinely impressive.

Come to think of it, now that I accept and expect such behaviour, I'm frankly (no pun, honest) bored with the mundane. When I go to the Royal Bank and don't see a chorus line of toothy kiddie tellers serenading the customers, I could almost turn and leave. It's only the realization that I need the 50 bucks to feed my plastic flamingos that makes me stay and endure the grinding crassness of it all.

Even my dreams aren't good enough for me anymore. You'd think that sleep would be a safe enough place to put my trust for excitement, but apparently I'm falling down on this count. My dreams, instead of being populated with lost loves, lonely days and longings, usually consist of things like falling out of bed, talking to my parents, and eating the world's biggest and soggiest Canteen of Canada sandwich.

There's just nothing to be believed in this world, except that you will not understand your next Calculus assignment. Everywhere we are regaled with tales of wonderment and fantasy, and everywhere we are let down. It's this sort of treatment which makes me, personally, realize just how lucky I am to be a disciple of something as pure, as lofty and as real as mathematics.

By the way, did you hear that math has been declared illegal in McDonaldland? Man, are you ever out of it!

Young Frank Einstein

continued from page 2

students about careers in business, industry, government and education. Finally, an extensive campus recruiting program is held each year which provides a wide variety of employment opportunities for graduating students.

The Career Information Centre, located on the first floor of Needles Hall, is open 8:30 a.m. to 4:30 p.m., Monday through Friday. The Centre's resources cover a wide range of information helpful in achieving personal goals and making educational and occupational choices. This information is organized into five main areas: educational, employer literature, career planning, summer study and travel, and alternatives. a

The largest part of the *educational* section is the collection of calendars from across Canada, the United States and abroad. To give information in locating the different educational programs there are directories by subject matter and by country. Application forms and books of information about the various graduate tests can also be found in this section.

Employer literature includes files and shelves of literature from the companies which interview students for co-op and graduate jobs. There are

also directories and listings of employers in the various fields and a file of information and maps from cities and provinces.

The *career planning* area contains books with information on self-evaluation and goal assessment. There are also books about different occupations and binders with occupational information received from various associations and organizations. This section also contains books about resume and letter writing, job search strategies and interviewing.

The *summer study and travel* section has maps and travel books for countries around the globe. There is also information on studying and working abroad.

In the *alternatives* area there is information on preparation for non-traditional careers, such as a hairdresser or a chef, which do not require university training. Some books on alternate lifestyles, information on correspondence schools and on how to start a business are also in this area.

Now that you know the scope of information contained in the Career Information Centre, you may wish to come in and take a look at it. The

continued on page 11



Voting with Taxes or Ballots

As the **Monologue** article in the September 19 issue of mathNEWS was trying to get an opposing view, here is one. The system proposed for "tax voting" is impractical and would never happen anyways. Here are just a few of the problems that exist with this system:

If you were to give money for roads, then Bill Davis would probably pave the roads between his house and Queens Park with gold.

If someone else is filling out your form, how would you know your money is not where the person filling out your form(s) wishes? Honesty can't be enforced.

How many people would support the handicapped or such? In the present system very little goes to such things, but if you voted your taxes, everyone would think the other guy would vote his to these organizations and very little would end going to them.

Bureaucracy overflows. There are very many very small departments, so how could you decide on them all? Bureaucracy overwhelms. This would be an excuse for even *more* forms.

Many (possibly popular) organizations would suffer due to loss of income and possibly die.

An organization could very possibly run out of money before the year is up, and have no possible source of income, and the federal government couldn't give them any because they would no longer have control over the funding of non-governmental organizations.

Here is an equally unlikely, but far more plausible way for controlling where the taxes go:

As it is, you vote for the MP, and *then* you find out who gets into the cabinet. What could be done to improve on this is to have each party say who they would want for each cabinet post, and then put each of these people on the ballot, to be chosen by the voters. This would mean a multi-partisan cabinet, which would probably lead to much in-fighting, but at least the parties would enforce each other's election promises.

Sean Richardson
& the Mystery Man

An Entropic Isomorphism

Two things have always been a stab in the back for theoretical physicists, both of them imbalances in systems which by rights should be on a completely even keel. One is entropy, which constantly changes the amount of useable free energy; the other is the severe difference in the amount of matter versus anti-matter in our universe. I shall attack the former from the latter, and I hope to make some sense of all this:

Surely there must be an isomorphism between the I-line with its zero, negatives, and positives, and the universe with its nothing of a vacuum, antimatter, and matter.

Let us look at the specific similarities that there are. Firstly, if you have a -3, then there must be a +3 somewhere on the number line, with a zero in between. In the same way, if you have some energy, plus a vacuum, then you must have an equal number of atoms of matter and anti-matter and something to separate them, or all you will have is some energy. Second is this: If you take *any* negative number and add it to a positive number, the positive side of the number line will remain positive, as the number line has an infinite number of numbers on each side. Similarly, if you have an anti-matter particle roaming around in the universe, it will promptly annihilate itself and a particle of matter, but will leave the universe intact, and still full of matter. And thirdly, the negative and positive numbers are (*must be!!!!*) separated by zero.

What does this leave us with? Well, if the isomorphism is to be complete, there must be two universes, composed of matter and anti-matter respectively, but each with a sprinkling of the other present. This fact of course accounts for the disparity in the amount of matter and anti-matter in our universe.

And what of these two universes? Where did they come from? Why two? *What is the zero which separates the two universes?* Here theory ends, and pure speculation begins, but that's why I'm writing Sooo...:

The first question is not really all that hard: if anti-matter and matter can annihilate each other to form energy, then energy must be able to form an equal amount of matter and anti-matter. The second question is as easily dismissed: there are two universes because opposites usually come in pairs, not triads or worse. The third question is the biggie: what keeps our universe and the anti-universe from exploding at once in a double-big-bang??

To explain this, I must return to our nice little forming universes. Perhaps the picture I painted was too docile; Nobody (transl.:hardly anybody) doubts that the universe was formed with a big bang, and any theory on how the two universes were formed must take this into account. Where would you get enough energy to form a couple of universes with a big bang? Why, by blasting another pair to smithereens, of course. Imagine this: something allows the two universes to come into contact, and they form the prescribed ($e=mc^2$) amount of energy, which entropy (told you I'd get to it) promptly starts breaking down into mass, which is possible if we trust relativity.

But as far as we know, there was nothing separating the universes in the first place: we are still missing our zero. Or are we; what of entropy? Since mass and energy are essentially the same thing, entropy will eventually turn all the free energy around into mass, which by itself can do no work. In fact, if the same thing is happening in the anti-universe we have solved both our original dilemmas: as well as keeping a matter-anti-matter balance, the two universes keep the amount of useful energy at a stable level over the time from which they were formed till they die.

Look at it in this way: the matter and anti-matter big bang which is the ultimate result of entropy in one sweep reverses all the accumulated entropy by turning all mass into energy, and forming a universe is useful work, isn't it? This means that entropy is both the cause of the separation of the universes and that which destroys the separation.

There still remains one problem, however. What keeps the newly forming universes from mixing at the very start? Entropy can't help, since it occurs over a period of time, and therefore we will be in danger of a perpetual big bang for an instant. But there is still hope: at absolute zero, as the mass would be at the very end of the universe, there is still some residual energy. If things are perfectly symmetrical, when the mass becomes energy, the leftover energy will become matter or anti-matter respectively, depending upon which universe it came from. This little bit of matter would form a "seed" around which each universe would form; entropy can then take over, leaving two habitable universes until they too run down.

I *hope* I tied up all the loose ends, and I *hope* I made some sense of all this mess. Please let me know how far off track I was.

Sean Richardson

GRAPH THEORY Word Search

HDIRECTEDPC
SAEERGEDLGI
EVMERTIARRT
THGIEWNREAA
REGULARETPM
BIPARTITEHO
ETELPMOCMSR
EULERIANACH
DUALACITIRC
CONNECTEDAX
CIHPROMOSIN

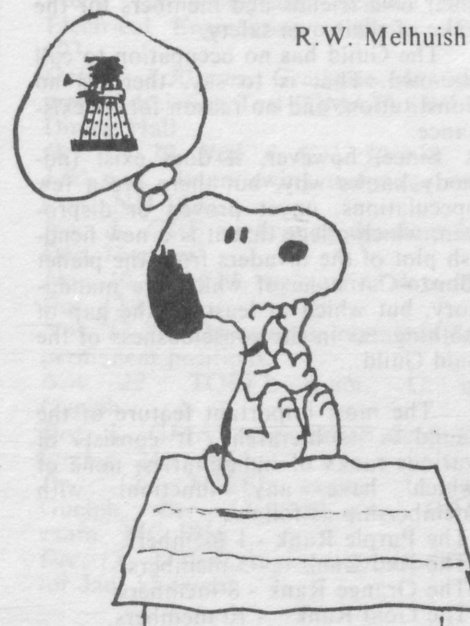
Search Words:

Arcs, Bipartite, Chromatic, Complete, Connected, Critical, Degree, Diameter, Directed, Dual, Eulerian, Girth, Graph, Hamiltonian, Isomorphic, Planar, Regular, Set, Weight.

Leftover:

A graph has to start somewhere (6 letters).

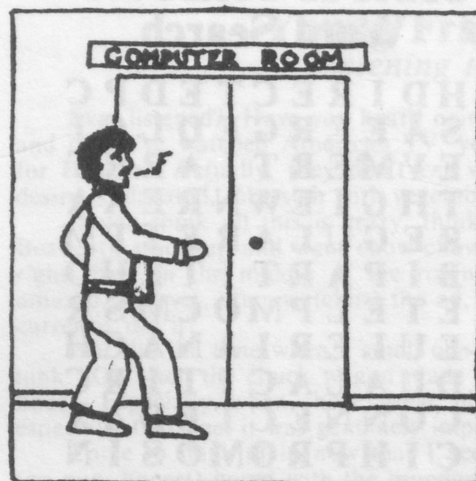
R.W. Melhuish



All those unanswered questions....

The Magnificent Matho! (Part II)

1. Yes.
2. No.
3. The Magnificent Matho.
4. Is the Pope Catholic?
5. Let's hope so!



The Guild

The Guild is a non-recognised disorganization which does not claim to be or do anything in particular except to be a band of extremely treacherous, vicious, presently paranoid (they weren't always that way) group of students who will shoot their own friends and members for the sake of their own safety.

The Guild has no occupation to call its own. That is to say, there is no constitution, and no reason for its existence.

Since, however, it does exist (nobody knows why, but there are a few speculations, unyet proven or disproven, which allege that it is a new fiendish plot of the invaders from the planet Bonzo-Cat none of which are mandatory, but which at least fill the gap of nothingness in the consciousness of the said Guild...

The most important feature of the Guild is its hierarchy. It consists of various ranks of indignitaries, none of which have any function, with membership as follows:

- The Purple Rank - 1 member.
- The Red Rank - 5 members.
- The Orange Rank - 8 members.
- The Gold Rank - 10 members.
- The Yellow Rank - 11 members.

The purple rank is the rank comparable to any self-styled, tin-plated dictator of the real world. He attempts to rule over his subordinates, usually by avoiding them. He has the power to resurrect any dead yellow members at his whim, as long as he doesn't charge more than 20\$ for services rendered. He may also produce any new rulings (preferably not telling anyone about them until they are violated to his disadvantage).

The red rank act as the purple rank's lieutenants. In that capacity, they are the ones he avoids most often. They have no other purpose than to

eventually become purple if he should become a nuisance to the Party - I mean, the GUILD (sorry about that).

The only other rank of mention is the yellow rank, which acts as dart-gun fodder, aids to purple (he has the power to resurrect them, remember), and generally as a garbage collection feature for incompetents and new members.

Since members have a strange way of always wanting to kill each other (Psych 203 is doing an in depth study of the phenomenon), a few regulations were dreamed up in order to settle this sort of business up in an orderly manner as suits civilized folk and university students who feel a periodic thirst for blood, namely as follows.

Rule 1) Any live member may shoot and kill any other live member.

Rule 2) Any live member may, if he wishes, exchange ranks with a successfully slaughtered victim iff that victim is of the rank immediately above his own. In either case, the victim becomes a "dead" member.

Rule 3) Any "dead" member may shoot and kill only live members of rank immediately below his own. In the case of success, the previously "dead" member becomes alive again, and the "death" migrates down to the new victim, and so on. This precisely follows the esoteric rule a life for a life.

Rule 4) Any live person may also shoot and kill a "dead" member of rank immediately above his own, and exchange ranks as per rule 2.

Rule 5) Any innocent bystander who is annoyed with just cause with the presence or activities of members of the Guild may ask that they discontinue whatever the cause of annoyance and members will comply.

Rule 6) Any bystanders who assist a Guildmember or hinder another are not innocent and therefore do not come into consideration under rule 5.

Rule 7) Any weapon not utilizing as killing mechanism a suction-cupped dart is an illegal weapon until approved by the Guild in a majority vote or without a majority vote, if ruled by the Guildmaster (purple).

Rule 8) Currently approved weapons are dart-guns, blowguns and darts used in the manner of daggers only, as long as they cannot work over a distance of 40 feet.

Rule 9) Classrooms, labs, c&d, math-soc and other places which might prove to be unsuited to guild warfare are considered to be sanctuaries and may not be violated under pain of expulsion. (Note: I just made that rule up, but then again I can do that)

Rule 10) Any member who is currently not in Waterloo-Kitchener is to turn in his membership when he becomes a non resident, unless he is absent for less than 1 week. If he is Guildmaster, he must entrust his rank to a red member, and retrieve it from him when he returns. If upon his return, a new guildmaster has seized power, the old may become red in the old player's stead, while that one becomes whatever rank he now is.

Any person foolish enough to want to risk their lives, and more important, their academic term, may enquire from any member (recognizable by the multi-colored bands they wear and their ridiculous attitudes and gestures) as to the current state of things. Presently, new bands are available at Waterloo Square, downstairs in the Creative Arts Shop, and guns can be had for an extravagant \$2.13 at K-mart (Conestoga mall only. The other stores are sold out).

kjfeuerherm
Present Guldmaster



Telidon

On Thursday, September 25th, Professor Dave Morgan, formerly of C.C.N.G., now of DEC, gave a talk to the CSC on "Network Architectures for Telidon." Telidon is an interactive television network that is being developed in Canada. Since most of the audience was unknowledgeable about the subject matter, Professor Morgan gave a lengthy introduction.

Before Telidon was thought of, the British post office, looking for better and more expensive ways to charge people using the telephone, developed a system called VIEWDATA, which was an alpha-mosaic system, i.e. the TV screen was split up into 400 squares which could be either coloured or have a character in them. Because of some patent problems, this system was renamed to PRESTEL. This system, though the least pretty of the various systems available, is the cheapest.

The next development in interactive television was Telidon, an alpha-geometric system, where the television screen is divided into a dot-matrix (say 512 x 512). These dots are printed out using picture descriptor instructions. Compared to Prestel, Telidon was a great technological event, however there are problems with Telidon, namely the fact that it requires an extremely high baud rate to get a picture in a reasonable time.

The newest system was created by the Japanese. This is the alpha-photographic system. It can, as the name implies, reproduce pictures. The British, not to be outdone, created their own alpha-photographic PRESTEL. So that the user wastes a lot of money, it first sends a vague picture, then as the minutes go along, the picture becomes clearer and clearer. The meter is of course running along steadily. This system is even slower than the Telidon, but the Telidon's picture quality pales in comparison.

With interactive television, many things can be done. One can for example boo the umpire of a baseball game and the announcer can say that 86% of the audience did not like the call. One can also do such things as electronic publishing and shopping. But since the television is interactive, advertisers can say such things as, "If you hit the <cr> key right now, you can save yourself \$500!!!!!" One can also do opinion analysis, but this has two problems. First, the poorer people are not likely to have interactive television. Second, the people who run the computers which tabulate the results will know everything that you have ever said! With this new television, one can also have an electronic mail, a system monitoring your home for intruders, electronic games, etc..



... mid-whats?

If interactive television becomes at all widespread, then there will certainly be problems with distribution. After all, how many computer systems do you know that are able to handle five million users at a time? The answer of course is to develop networks. Each neighbourhood has its own little computer which can look after the needs of the local users. If something is asked of it that other it can not handle, it sends the request to a larger, more important computer which is linked to third-party computer systems and can make requests to those third-party systems. In Winnipeg, a test system has been developed that when fully operational will be able to hold 2048 homes. It is governed by a IBM Series\1 computer, which is connected to other computer systems via a network access and to its users via two-way cable. The region covered is split up into eight areas, each holding 256 users. These areas are split up into neighbourhoods. With this system, users can request to see any program that they wish to see. They can also interact with users on other systems.

To finish off his talk, Professor Morgan discussed the various options that are available for user-computer interface. First, there is two-way cable TV. Second, is use of a telephone in both directions. Third, there is the use of cable TV out and the telephone back in. Fourth, there is the use of broadcast out and the telephone back in. Fifth and perhaps not last is the use of a fully digital independent network.

After the talk, there were the normal tea and doughnaughts.

John Plaice

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two full-time staff in the Centre, Ellen Shenk and Cathy Freeman, will be glad to help you use the information in the Centre. If the Centre does not contain the information you require, they will help you direct you to individuals or resources outside the Centre where you can receive help.

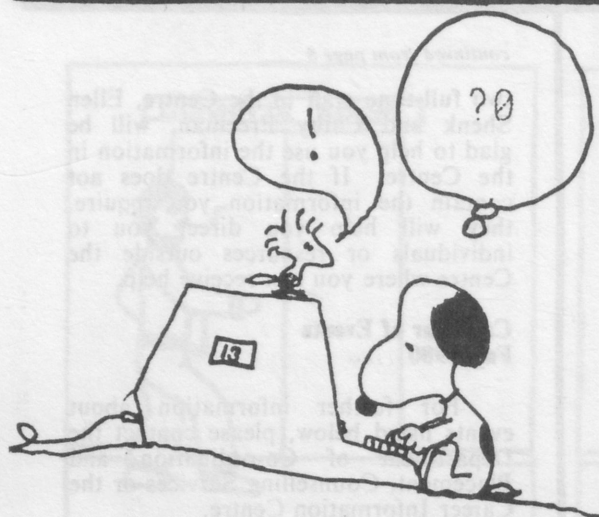
Calendar of Events Fall 1980

For further information about events listed below, please contact the Department of Co-ordination and Placement, Counselling Services or the Career Information Centre.

- Oct. 16, 12:00 noon to 2:00 p.m. Information talk on M.B.A. by representative from McMaster. NH 1020.
Oct. 18, 9:00 a.m. to 12:30 p.m. Foreign Service exam. MC 2034.
Oct. 18, 8:30 a.m. Graduate Record Exam (GRE). MC 1056.
Oct. 20. TOEFL registration deadline for Nov. 22 exam.
Oct. 22, 2:30 p.m. Talk from the Faculty of Education at Nipissing University. NH 3059.
Oct. 23, 1:00 to 2:00 p.m. Briefing sessions by Mitel on their employment needs for Computer Science and Electrical Engineering students. EL 103.
Oct. 25, 8:30 a.m. Graduate Management Admission Test (GMAT). WLU Dining Hall.
Oct. 28, 30, Nov. 4, 6, 11:30 a.m. to 1:00 p.m. Interviewing technique session. NH 1020.
Nov. 3. GRE application deadline for Dec. 13 exam.
Nov. 10. TOEFL registration date for Dec. 12 exam.
Nov. 17-28. On-campus interviews for permanent positions.
Nov. 22. TOEFL exam. U. of Guelph.
Dec. 3. GMAT registration deadline for Jan. 24 exam.
Dec. 12. TOEFL exam. U. of Guelph. Dec. 13, 8:30 a.m. GRE exam. MC 1056.
Dec. 15. TOEFL registration deadline for Jan. 17 exam.

Answers to Last Week's Challenge Gridword

ACROSS		DOWN	
1a	ENGINES	a1	ERA
1i	ICE	a5	TESTING
3a	AS EASY AS PIE	e1	GREENGROCER
5a	TONAL	e1	NASAL
5g	LORNA	e7	MARIA
7a	SERUM	g1	STALL
7g	FLUTE	g7	FROSH
9a	INCORPORATE	i1	IMPORTANT
11a	GAR	k1	ELEVATE
11e	ATHLETE	k9	EYE



Here is Snoopy and side kick Woodstock ready to start one of a session of hacking at the good ol' terminal. Little does Snoopy know the horrors that wait for him. After all he's just a frosh... Unfortunately this means the system he is signed on to is Widjet... (Widjet is a system that is unduly picked on, however, will serve as an example here...)

Widjet of course stands for:

WIDJET	SUCKS
o n u o x i	i n o i t
u f r b c m	n i m l u
n l i e e	i v p l d
d i n c	s e u s e
s c g u	t r t n
t t	e s e t
e i	r i r s
d o	t
n	y

(not quite exactly what Widjet stands for but close enough...)

Soon Snoopy's expression will change as he learns the undocumented horrors of the system. Soon hours of work will be rendered useless. Travelling at the speed of light a lone cosmic ray particle zeroes in on its target.

Meanwhile Snoopy is just finishing the last touches to his CS assignment that has now taken him over 5 hours to finish. Woodstock watches on as Snoopy's archive request reaches queue position 1 while Snoopy is congratulating himself on a job well done, but little does he know the events yet to take place....

Travelling for hundreds of years, created for one sole purpose our distant particle from the Crab Nebula reaches its target (a memory cell within the inner workings of Widjet's brain). As our traveler's life comes to an end he leaves his epitaph in the newly randomized bit patterns that were critical pointers for the operating system... Widjet dies a painful death and Snoopy heads for the CC...

Time passeth....



Remember save your files...
Murphy's laws are an optimistic view of reality...

mike

Limerick

The draftsman emitted a cry,
"I've created a line with length π !"
But it went to rejection:
On closer inspection
They found 'twas a millionth-inch shy.

- PF7

It's 02.928 and mathNEWS is coming to you from Honeywell Central, MC 3016. Nice typewriter, huh? The old buzzard finally died. (Hint, hint) We're using the amazing Diablo 1620 which is really much smarter than we give it credit for. It feels quite insulted being used as a typewriter! We've just returned from Pizza Pie. Yum yum, says Ashok, who is running the backspace key. Thanks Ashok. We had a 9-slicer. Anyhow. To all who helped today: you missed a good 'za. These peoples missed the 'za. James Puttick (the Diablo sputters!) David Till (Government) (bicycles) Joanne West (went to bed early, like about 1 a.m.) the co-ed; goodnight Jo!) Brad Templeton (Mono-log) Peter Rowley (CSC) PF7 (apwelch, ha ha) (grids) PF9 (apwelch, the real) and friend Chive (comix,

The REAL editor. -rb.

calendar), Sean Richardson (alias SEEN) (mighty Frosh, retort to mono), Burloaf alias BADGER, who felt guilty about writing anything intelligible, Kevin O'Shea (bunny article which was AXED!!! ha ha, feelings of POWER!), Rod Currie (Engine Ear article, also killed, maybe next week?), rwmelhuish (word search), William Hughes (layout and moustache wiggle), Mike Gore alias God, (snoopy, cartoons & article), John Anderson (FASS), Karl Feuerherm (the Ass-ass-in's Guild), J.J. Long (interaction and fatherly good advice), etc. Now for the lucky guise who got to eat the 'ZA! Ashok Patel (3 smallish pieces), John Plaice (3 middling ones) and Alan Munn (who hogged the biggest ones when the 'za was served...) So, that's 3, and 3, and 3... that makes... er... shoulda stayed home today. Andddd I, the lesser speckled co-editor, Ross Brown alias (a.k.a. Young Frankie), who must now keep himself awake until at least 8 this morning to present this to Graphic Services. Oh, yes, I had a meatball sub... We were beaten back to MC by two guys on !@#S\$%!!&\$* Bicycles. which cost more put together than the car we were riding in, so that makes sense, I guess..... One thing this Diablo cannot due is hold its water.

It wants to go to the washroom. As you can see. Bye cp disco-necks

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