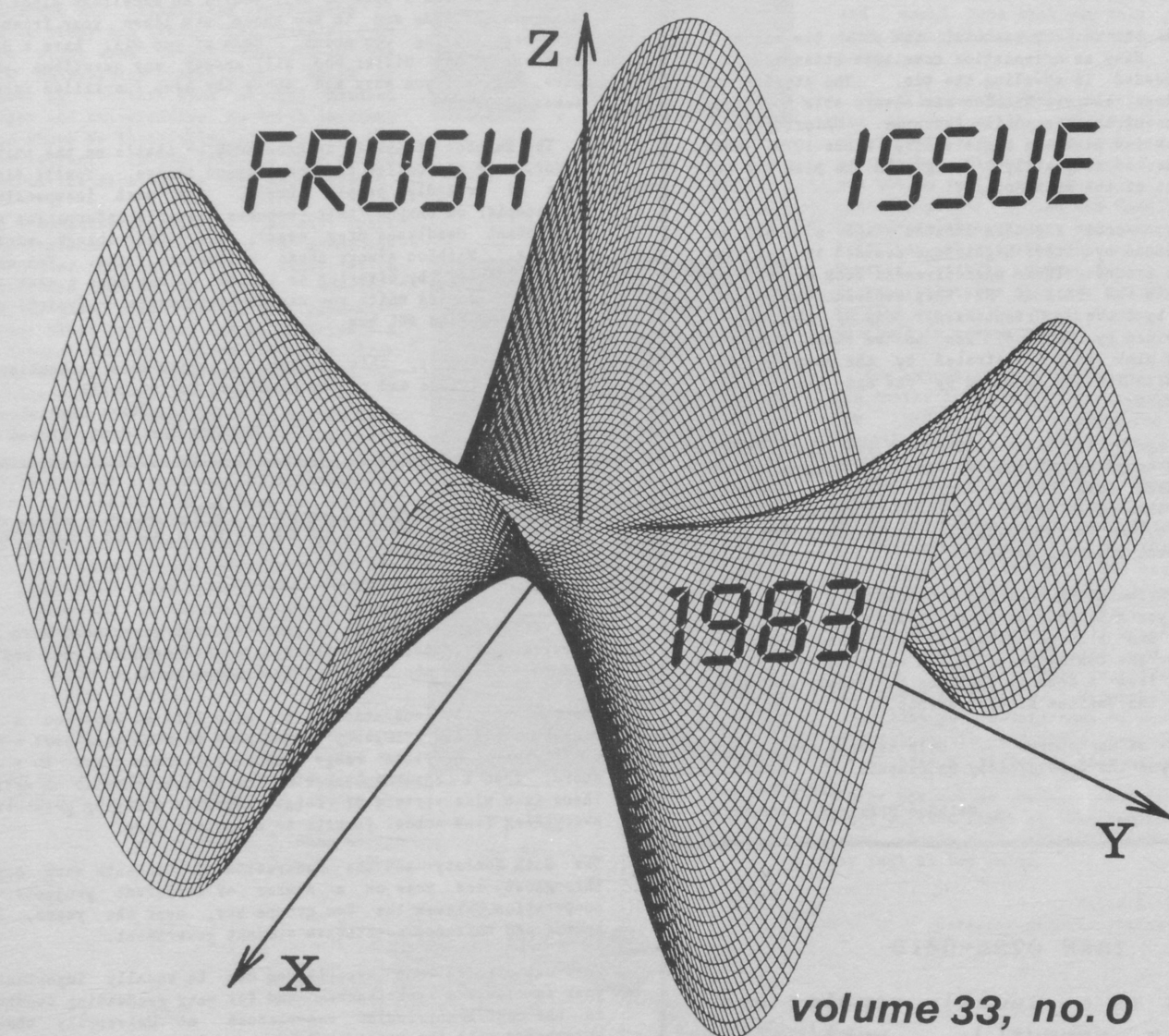# math NEWS

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volume 33, no. 0

pRESIDENT'S mESSAGE

Sixteen years ago, Ralph Stanton, a professor of mathematics, saw his dream become a reality. Through his persistence the University of Waterloo introduced the first Faculty of Mathematics in North America. In the old mathNEWS articles he was described as a vibrant personality who wore the clothing to match. During the opening ceremonies of the Math and Computer Building a huge pink tie, spanning six stories, was hung from the roof in his honour. Soon afterwards the students formed their own society, MathSoc, and this same tie was adopted as the "mathscot".

As with all the society mascots, the pink tie was well sought after. Many an orientation committee attempted, and some even succeeded in stealing the tie. The stories are virtually endless, and yet MathSoc was always able to regain the possession of the tie until recently. Unfortunately, there have been few pink tie sagas written since 1978, when the tie disappeared completely. Along with the pink tie was lost the spirit of the Math Society.

Fortunately, some eighteen months ago a group of individuals headed by Steve Lightstone decided it was time to turn things around. Their aggresiveness took everyone by surprise and in the Fall of '82 they stormed the campus, again headed by Steve. Orientation, one of the largest services provided by MathSoc, was to be their greatest triumph. As pink ties infiltrated by the campus, the MathSoc organization was praised by one and all --- The mathies were back!

This year, again, the theme is the pink tie. Last year's orientation, a tough act to follow, should be matched by co-chairpersons Ross Robertson and Joanne Casteller directing the show. They have worked hard to introduce you to university life, and to help eliminate the fallacy that math students are hacks, nerds, or both.

Apart from Orientation, MathSoc provides many services of which we hope you will soon be aware. The Council has also been working, and a large number of events and activities are planned for the coming term. You can also help, with things ranging from a Council position to simply attending and supporting the various MathSoc events.

In the words of our slogan ... Help us make the biggest society on campus the best society on campus!

Laura Redican
MathSoc President, stream B

The Other President

Welcome to UW! Congratulations on being accepted into the best math faculty anywhere, on the most underrated party campus.

My name is Steve Lightstone (Typist's note : a.k.a. CAPS) and I'm the MathSoc president for the other stream. This means that I'll get to know those of you in stream 8 when I'm back on campus in January.

MathSoc is the biggest and best society at UW. We hope that the '83 frosh class will help make it even better. Orientation week is filled with great activities aimed at helping you to get to know some of your fellow frosh. The pub crawl is (do I need to tell you?!) an excellent place to make new friends and to try those new lines your friends have been telling you about. Each of you will have a Big Brother or Big Sister who will answer any questions you have, or tell you when and where the next fun-filled event takes place.

The MathSoc office is in Room 3038 -- that's on the third floor, near the Coffee and Donut stand lounge. You'll find lots of friendly people there, the most inexpensive photocopier on campus (this becomes valuable information as assignment deadlines draw near), and other things worth knowing. MathSoc always needs volunteers, too. You can become involved by offering as little as one hour a week of your time (during which you can do assignments -- Typist) -- drop by and find out how.

Most importantly, this is not an us-and-them situation. MathSoc is funded and run by students, for students.

Steve Lightstone
MathSoc President, Stream A

Federation President

Dear Math Students:

The Federation of Students is your student government here at the University of Waterloo. The Federation welcomes you and would like to tell you about some of the things we do.

The goal of the Federation is to make life at Waterloo a little more bearable and everybody's time here seem to pass just a little bit faster. Services range from an ice cream stand to a record store, from a Legal Resources Office to cheap movies on weekends. There is a wide variety of retail services offering great buys on everything from school jackets to chocolate bars.

The Math Society and the Federation of Students work together throughout the year on a number of different projects, and cooperation between the two groups has, over the years, led to better and more representative student government.

Your out-of-classroom experiences can be equally important with your in-classroom experiences, and for many graduating students it is the extra-curricular experiences at University that are remembered with the greatest fondness. The message in all of this that there are a lot of things to see and get involved with here and I would encourage you to take a look at, and get involved with, as many as you have time for.

The offices of the Federation are located in room 235 of the Campus Centre, and our phone number is 885-0370 or on-campus extension 3880. Drop by or give us a call if we can be of any help, or if you need any photocopying done.

Tom Allison
President
Federation of Students

The Dean's Message

Welcome to the Faculty of Mathematics. For a few days you may feel a bit lost, but it may be some consolation to know that you almost certainly have lots of company! Senior students, faculty and administrators will be glad to help you find your way around, so don't be afraid to ask for guidance. OPERATION MATHSTART, operated in Room 5158 of the Mathematics and Computer Building, is a good place to find information, and to meet professors and fellow students. (The free pop and doughnuts are good too!)

We think you will find our Faculty an exciting and challenging place. Of course, you are ultimately responsible for your success here, but we do our best to provide a pleasant and stimulating environment in which to study and learn. For example, some of you might want to get involved in the Putnam Mathematics Competition, which is written by students from several hundred colleges and universities in North America, and in which we invariably place in the top ten. In fact, in the 1982 our team placed second to the first place team from Harvard.

As a computer scientist, I am well aware of the numerous opportunities for graduates in Computer Science. This makes it a tempting and attractive choice. However, there is also great demand for graduates from our other programs, and we anticipate a high demand for our future graduates from our new division of Mathematics for Industry and Commerce. Regardless of your choice, I urge you to use every opportunity to take courses "outside" your area of emphasis, because successful work in most areas requires a wide assortment of mathematical skills. In particular, those of you who choose Computer Science should know that a broad mathematics foundation is essential. Similarly, students in other programs are well advised to take appropriate Computer Science courses, to learn the applications and implications of computers in those disciplines. Our Faculty provides a splendid place to obtain such a multifaceted education.

Once again, welcome to Waterloo. You are a fine group of incoming students, and we expect great things of you. We are glad you are here and hope you enjoy your studies.

J. Alan George
Dean
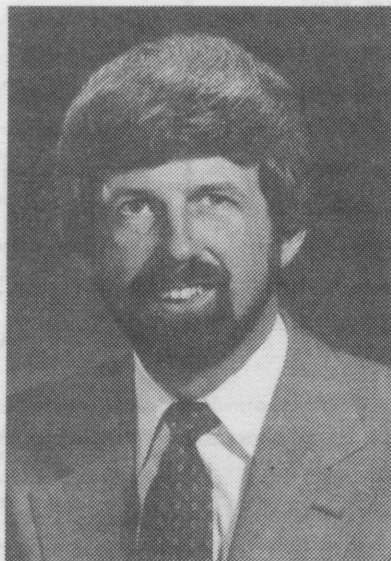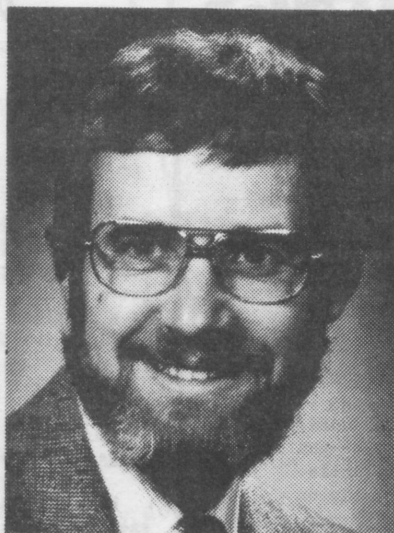
The Director's Message

As Director of Undergraduate Affairs in the Faculty of Mathematics, I would like to extend a warm welcome to all of you as you embark on your freshman year at the University of Waterloo. We are fully aware that your first few weeks on campus can be rather hectic ones as you adjust to a totally new environment. However, we also hope that you will take advantage of opportunities to make things as pleasant as possible for yourself. OPERATION MATHSTART, in particular, is intended to assist you in coping with registration and scheduling problems that often face new students. It is also a chance to meet other students and Faculty members in an informal atmosphere. In addition, your Orientation Package contains all kinds of useful information, and I would hope that you take the time to read through this material with considerable care.

At a large university it is easy to get the impression that nobody really cares about you, and as a result, you can become very much a "loner". I would urge all of you not to fall into this trap. There are numerous people around the Faculty and the campus-at-large who are more than willing to help you get started on the right foot. However, with so many students, it is your responsibility to make new friends, contact Faculty members for assistance, and become involved in campus life.

The amount of work facing you in the next few months is probably greater than most of you have ever encountered before. Nevertheless, if you plan your time carefully, you should be able to give your academic studies their fair share of your hours and still have time left to devote to social and recreational activities. There are innumerable activities on the campus to suit everyone's tastes. The secret is to find a good mixture of enjoying yourself and doing justice to your studies. The actual blend in this mixture will depend largely upon individual interests and academic ability, and these vary considerably from one person to another. Nevertheless, it is vital that you devote some of your time to both scholastic and social activity if you are to have a rewarding time at university.

I urge you not to delay. Get involved and start working right at the beginning of the year. Don't wait until "later". "Later" may just be too late!

Peter C. Brillinger
Director of Undergraduate Affairs
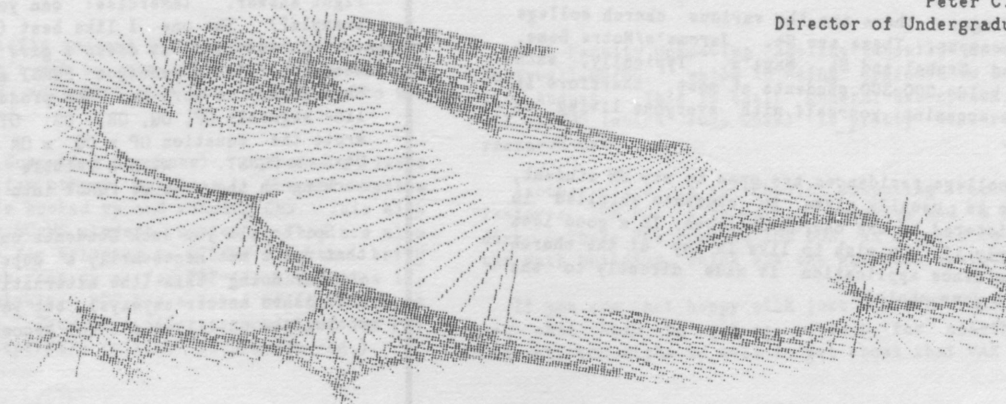
COARSE OFFERINGS

Village 1 and Village 2

The lottery for on-campus accomodation takes place in the summer. Approximately half of the spaces available are reserved for frosh in the fall term. When the no-shows are tallied in September, another draw is held for the empty spaces and you must be present at that draw if you are not yet in residence. It is a good idea to consult the off-campus housing office as soon as you decide to go to the U of Waterloo in order to arrange for accommodation if you are not in Village, or if you have a slim chance of getting into residence. This office is located on the roof of Village 1, where lists of available off-campus housing can be found. They are quite helpful in locating accomodation for you--you do the looking but they will make known what is available. For those of you who are in residence, let me ramble on further.

Village 1

The fortunate ones of you will be in Village 1 with either a single room (all to yourself) or an interconnecting (one room opens into another occupied room--this is not as bad as it sounds). The food is something everyone complains about but it isn't as bad as it sounds either (have you eaten at University of Manitoba or the University of Toronto?). The room is cleaned and the bedding changed by a house mother every week. Each room comes equipped with a desk, two chairs, a thing they call a bed, two closets, a few drawers, a mirror, and a telephone (all you pay for is the long-distance calls you make). Three walls are brick; the fourth is cork (however, any pins that you need must be purchased). It is a reasonably good set-up--at least the floors are carpeted.

Village 2

Regardless of all the horror stories your friends and/or teachers may have told you about Village 2, very few of them are true (but some of them definitely are. -ed.). Weekends generally begin Thursday nights (with all the assignments due Friday morning). The rooms are all double rooms (unless you are a don) and have the same facilities as the ones in V1, except there is less cork on the walls and in North, East and West quads there is a partition in the room dividing it into two parts. Roommates can be specified if you both are in residence (no, the floors in V2 are not co-ed). Spending one term in Village 2 is a great way to meet people and is a good experience.

Church Colleges

Besides the Village, there are the various church college residences on campus. These are St. Jerome's/Notre Dame, Renison, Conrad Grebel and St. Paul's. Typically, each church college holds 200-300 students at most, therefore it is possible to acquaint yourself with everyone living at your residence.

The church college residences are open to any UW student, but preference is usually given to students enrolled in programs administered by the church colleges. It a good idea to register early if you wish to live in any of the church colleges. Residence application is made directly to the residence(s) of your choice.

Miracle!?

Young Frank Einstein

>miracles<
a student's best friend

I wish to speak today on a subject dear to the hearts and red pens of those fearless (and sleepless) men and women who mark our assignments. For those students lucky enough to get a marking job at Waterloo, the scene I will now describe is a familiar one. For the rest of you, it may also be familiar frm the opposite point of view.

Joe Marker opens Jack Student's paper and begins to mark. Check, check, check, pause, sigh... check, check,... huh? Hm... x equals 12, ... therefore x equals 5. Red circle gouged in paper. Notation: "this isn't logical!".

Perhaps this is an overwrought example. But it exemplifies a condition which is spreading quickly in undergraduate mathematics assignments: the *>miracle<*. If a concise definition is necessary, this might be it: A *>miracle<* IS:

1. illogical
2. unexpected
3. at its best, imperceptible

The purpose of the *>miracle<* is to restore verity to a thoroughly bollixed solution. As such, it is to be distinguished from the much less impressive *mistake* which takes a consistent argument and destroys it, or (even worse, I fear) worsens previous *mistakes*. A *>miracle<* is deliberate and calculated to catch the one marker in three who after 40-odd papers has enough alcohol in his system or clouds in his head to consider only the bottom line of a solution. And it must work sometimes, or it wuldn't be done!

The other two markers of the three feel at first surprise, then shock, then pity, then revulsion and lastly disgust (and maybe the odd thought of murder) at the suggestion by Jack that Joe could be that bad a marker. I know that I've often wondered how these fine, upstanding young men and women, mostly Ontario scholars and a substantial portion os them spoiled brats, could be so devious. But I (and the rest of the marking profession) must salute the ingenuity and derring-do of these mendacious miracle workers.

It is particularly amusing to find that some *>miracles<* are based in common sense. For instance, here is one pulled by a friend of mine in Grade 12 (at a time when he didn't know sf(a) about calculus): Given the differential equation dy/dx = 5, he blithely cancelled out the d's and multiplied both sides by x to get y = 5x, which is effectively the right answer. (Exercise: can you find a more complicated example?) The one I like best (but which is not really a *>miracle<* since it doesn't give a right answer) is the one where there's a pentagon PQRST and a point O inside it. When asked to work out the product of the lengths of the line segments OP, OQ, OR, OS, OT, this anonymous Einstein wrote the equation OP x OQ x OR x OS x OT = OOOOOPQRST = O**5 x PQRST. With a little work you can imagine him working in the area of PQRST into his calculation!

So, to all you Jack Students out there, just bear in mind that Joe's not necessarily a dupe. He can't really punish you for doing this (the alternative to a *>miracle<* is an unfinished answer anyways) but you will remember it in your conscience until you die (or become a marker yourself).

Young Frank Einstein
on sabbatical

Hierarchy of

Hierarchy of Intelligence

Rene Descartes
Gottfried Von Leibnitz
Isaac Newton
Karl Friedrich Gauss
Euler
The Pink Tie
The Natural Log
Stud McGee
mathNEWS staff
Lewis Carroll (Charles Lutwidge Dodgeson)
The Jabberwock
UNIX
Calum T. Dalek
C&D Staff
Graduate mathies
CS majors
Other mathies
Imprint staff
the Honeywell
IBM PC
The Warriors Band
anything by Hewlett-Packard
fred
anything else by IBM
Gandalf boxes
SuperPETs
Science students
TI-59's
Kinesiology and Recreation students
Integrated Studies students
CKMS-FM
Student CMS
WIDJET
Artsies who take CS electives
University of Guelph
Commodore VICs
Other artsies
Engineers
WLU
Plummer Hard Hat Band
Graduate engineers
The Flaccid Tool
EngSoc executive
Chevron staff

Intelligence

HARDWARE

This article will briefly present all the wonderful computer hardware that you won't get to use until it's outdated, as well as the outdated equipment that you will have to use until you are outdated.

DCS (Department of Computing Services) operates a large number of IBM (and a few other) machines. The main system consists of four 4341s hooked up and running CMS. This also supports the infamous SCuMS student system. They are also the party responsible for bringing us WIDJET (chorus: bring on the clowns...)which runs on a few PDP-11s and Series 1s, plus innumerable terminals. DCS has a total of four PDPs as well as six Series 1s. They also offer a roomful of IBM PCs and another room of SuperPETs (a.k.a. StupidPETs -ed.)

Math Faculty Computing Facility (whew!), or MFCF, has a Honeywell 66/80, which is being upgraded to a DPS8/49 in late August. This is their general-use system, and their VAX 11/780 (which runs Unix) is pretty well restricted to research use.

Another place is the Physics Computing Facility, which features IBM PCs with colour graphics and a shared hard disk. These PCs run the IBM DOS, as opposed to the ones in the Math building, which use the Waterloo operating system.

If you are not happy with just a WIDJET account, it is not that hard to get an account for something nicer. However, you might as well forget about that VAX account...

Tom Watts

Orientation Week

I know what you're thinking.

You're telling yourself that you've got it made. You've been accepted at University of Waterloo and you're looking forward to meeting all those new people.

We're here to help you. If you are a bit shy and your opening lines will be "Hi...umm...I'm Jim and...um...well...um...," then we (they call us MathSoc...I'll explain why in a paragraph or two) can save you a lot of embarrassment.

MathSoc (I told you I'd explain) is the University of Waterloo Mathematics Society. Now I can hear you asking what a Math Society does. Do these people just sit around and differentiate everything? Do they spend their spare time (and yes, there is a little of that) proving by induction?

No!

We at MathSoc, and specifically those of us who have spent many hours planning for your arrival, are here to remind you that University is not all work and no play (on the other hand, we know better than to make it all play and no work...this has been the voice of experience speaking.)

Orientation is just what the name implies. We will help you get used to this place, to the big grey building we all know and love and call the Math and Computer building. We can give you the inside info about which courses are useful, which professors are worth getting, why you have to write a resume (if you're co-op) and even explain why MATH 000 appears on your timetable. We know the places to eat, the places not to eat, and, if you are lucky, the Epsilon-Delta Definition (about two weeks into the term you'll get this joke).

But mostly we are here to help you meet other people. To help you to realize that you are not the only one who doesn't know where the bookstore is, or who thinks WIDJET sucks (wait about two or three weeks for this joke, too).

What we've done is to divide you up into "teams" for Orientation Week (September 8 to 11). Each team will be headed by a Big Brother or Big Sister who is a member of the Orientation Committee and whose name is included in this package along with all these other goodies. I call each group of frosh a "team" because it's easier to write than "a group of frosh headed by a Big Brother or Big Sister". Being a Mathie, I tend to keep my terms short and concise (except when writing a work report).

Now I know you are just dying to know all our plans for Orientation. Even if you aren't, read on. It will be worth your time.

Wednesday, September 7 starts the whole week off. (Only in Waterloo do weeks start on a Wednesday and last only four days.) During the afternoon you will have the Orientation talks by the Faculty members and later the English Language Proficiency Exam (ELPE) (neither of which are organized by MathSoc). During your spare time in the afternoon you are invited to drop in to the third floor lounge, and to meet your Big Brother or Big Sister. Rumour has it that coffee and donuts will be available. Immediately following the ELPE you will be whisked off to some unknown location for "Fresh Froshie's First ..." Plans for this and most of the other events are being kept top secret for some unknown reason. (And I'm supposed to be in charge!)

Wednesday night you will also receive from your Big Brother the list of items for the great Scavenger Hunt. This hunt, rumoured to be the best on campus, will last until Thursday afternoon, and then ...

Depending on your choice, a bus will be waiting near the Math Building to take you for a night on the town. The first buses to leave will be the Pub Crawl, on which you'll be introduced to the great bars in Kitchener-Waterloo. You will not want to miss this!

For those of you who want to take it easy (or who can't find any ID ... you know what I mean ... you left it in your wallet or your other purse) we've planned a Fun Crawl which takes off soon after.

Friday afternoon at 2:00 p.m. (now that you're all rested up) we meet on the road by the Math building for FRIDAY THE 9TH. (Now this really is a total mystery!) I'll let you in on a small secret about this event (but don't tell anyone): it ends with a little party for all, so you might want to bring something a little warmer.

Saturday we meet on Ring Road at 10:00 a.m. for a trip to Elora for some Fun in the Sun. This will be a day of relaxation so you'll be ready for Saturday night. This night you will have the opportunity to meet some of the Frosh from other faculties, as MathSoc presents Monte Carlo Night in South Campus Hall. This will be a real big event with proceeds going to a charity. Be sure to bring your coupon from mathNEWS.

On Sunday the "Feds" will be holding a BBQ on the North Campus by Columbia Lake. More details about this event will be available during our week of fun.

On Monday classes begin. That's reality!

See you on Wednesday, September 7 on the third floor of the Math building. Until then, enjoy what remains of your summer.

Ross Robertson
and Dave Graham
for MathSoc Orientation

VIDEO FREAK ?

**For Video Game Addicts
Or Prospective Addicts
Only!**

The world is divided into two large and distinct groups of people - those who disdain video games, and those who cannot be trusted with quarters. To put it bluntly - video games are hazardous and addictive; if you let down your guard for an instant, when you next regain consciousness you will find yourself standing in front of a screen, frantically blasting as many aliens as possible. You have been warned.

However, for those of you who are already addicts, the Campus Centre offers a Games Room, featuring such video games as Stargate Defender, Space Invaders, Pac-Man, Centipede, Robotron and Berzerk, and several pinball machines. (Note: these were the games available at time of writing, July 1983, and the machines available are subject to change without notice (and restoration of the editor's memory as to what really is there!))

Hours of operation are usually from around noon 'till around midnight, seven days a week. Have fun, and see you there!

Money Talks

Now that you are living more or less on your own, you will need to manage your financial resources well. After many a trip to the Bombshelter, the CC Games Room or Fed Flicks, you may soon run out of money.

"How much should I bring to campus?" asks the young frosh. Well, you should try to establish a chequing account with a local bank (usually the Bank of Commerce in the Campus Centre building on campus, or the Canada Trust or Royal Bank at Westmount Place (Westmount & Erb). Other banks are available in uptown Waterloo (that's what the city of Waterloo calls it, even though we are north of the business section) or downtown Kitchener.) Registration and residence payments may be handled by cheque. Make sure that you have at least $2000 to back up both the registration and residence fees (a single room at the Village costs more than $1300 a term, and tuition fees are easily $700-800.)

Spending habits while on the University may vary. It is a good idea to have at least $500 on hand, either in your university bank account, or through an "interbranch" arrangement (the banks are computer connected so that you can withdraw money from out-of-town accounts). Ask your bank about arrangements for withdrawing or transferring money from out-of-town accounts. (I had difficulty moving money from my work term job in Northwestern Ontario to Waterloo and back again...it is a good idea to check it out and possibly change banks (though it's entirely up to you).--WJJ) (Note that some money transfers may take up to two weeks.)

Incidentally, you should never have more than $25 in your wallet at any given time. (Typist : I frequently carry more, myself. (on the other hand, I often carry none. -ed.)) You never know if your wallet is going to be stolen, and cheques should be used for large payments anyway. (I don't think a big blitz at the Bombshelter will set you back that much, and if a bank is open the next day, you can always retrieve some money).

Traveller's cheques are a nice method of carrying cash. Although the actual cost of the cheques includes a small (usually 1 %) service/insurance charge, traveller's cheques are easily replaced if they are lost or stolen. When you first get your traveller's cheques, you place your signature on each cheque. To cash the cheques in, you write your signature again on the cheque. The first signature "protects" the cheque against theft. The second signature must be signed in the presence of a teller or cashier, hence signature forgery is very difficult, especially for many a wayward pickpocket. Ask your bank for more details.

You should also consider having a credit card on hand (such as Visa). The University Bookstore and the Open Door Gift Shop (both in the South Campus Hall) both take Visa, MasterCard and traveller's cheques. A credit card is very useful for co-op students; you can apply for a card at your local bank. Once you get your card, however, don't go on a buying spree. There's a high interest rate charged on unpaid bills (24% per annum) and a hold may be placed on your bank account for the limit of the card.

Financial aid is available for students as well. Besides the obvious entry awards and fellowships, bursaries and emergency loan funds are available. Consult the 1982-83 UW Undergraduate Calendar for more information. One more word of warning...if you have government assistance through OSAP or a Canada Student Loan, don't forget to let the banks know you are attending classes or you may default on the loans. This could be a very sticky situation.

$$b4\alpha q \frac{ru}{18} qt\pi$$

Here's something for you to practice on for in preparation for your 1A Calculus.

Park twice before thinking

CO-OP

Many of you will be enrolled in the Co-op Program at UW. Besides the usual academic stuff, co-op students have the privilege of work experience (often "state of the art" work at that) to put their academic knowledge to practical use. Waterloo has the second largest co-op enrolment in North America; years of experience on Waterloo's part have made Waterloo's Co-op program among the best.

You will be in Stream 4 (your first work term starts January '84) or Stream 8 (your first work term starts May '84). In some cases, many students are asked to switch from Stream 8 to Stream 4 if there is an abundance of students in Stream 8. The stream that you begin with is not really that crucial, since you will have to spend two Spring terms here in either case. You may not relish the thought of having to spend your second academic term here in the summer, but some of us have to put up with it. (Besides, if it weren't for us, who'd do the frosh issue?! - WJJ)

If you don't know how to write a resume, then you had better learn fast. You must compose a resume and submit 20 copies (early in the term before your first work term) to the Department of Co-Ordination and Placement. The prospective employers will use your resumes to assess you as a potential employee. Make sure that the resume is a good one; this is your first chance to 'sell' yourself to potential employers, and you should make good use of it. Most employers agree that this is the crucial first step.

Speaking of this Orientation, this program is a series of weekly presentations designed to assist new co-op students with the operation of the Co-op Program (it is listed as Math 000 in your computer-produced timetable). Sessions on resumes, interviews (discussed later) and learning objectives are included in the co-op orientation.

Sometime in the middle of the term before your first work term, you will be subjected to the interview process. Jobs are not just handed to you on a silver platter; you must sell yourself to the prospective employers. You will first choose up to fifteen employers from the "Want Ads"-- a newspaper containing descriptions of available co-op jobs--which you must obtain from Co-ordination. You then have only a few days with which to choose your prospective employers from a myriad of job listings.

The fun part comes next: the interviews themselves. Almost every day during interviews, you will have to cope with great hordes of people so that you can read the interview schedules. If you are scheduled for an interview, you must attend, provided that you have no pressing business (such as midterms). If you have to change your interview time, you must try to swap your time with another student being interviewed by the employer. Missing an interview is stressed as a cardinal sin in the eyes of Co-Ordination and Placement, for it screws up their wonderfully efficient placement process (not to mention that it screws things up for other students as well). When you attend an interview with a potential employer, it is a rather formal occasion (i.e. suits and ties for the gentlemen, and dresses for the ladies).

After your interviews, you have the privilege of ranking your employer depending on how much you like a particular employer or how much you will benefit from any of the jobs you are eligible for. The employers, in turn, get to rank you, too. When all the rankings are filled out, they are processed by some mysterious computer program and subsequently, most students are matched with an employer.

CODE PINK

In co-operation with the Mathematics Society, there have been additions made to standard University emergency procedure. Please read the following very carefully:

1. In the event that an invasion by Engineering students is about to occur, an Engineer Alert is in effect.

2. When an Engineer attack is imminent, sentries are to alert all Mathies in the Math Building. The sentries will notify all Mathies of an impending Engineer attack, and all Mathies are subsequently advised to wear the standard distress signal (i.e. a pink tie worn upside-down). In addition to this, all operations of MathSoc are to be suspended immediately so that office staff may co-ordinate the emergency measures.

3. Upon hearing the Engineer Alert, all mathies are advised to secure the following:

- 10 litres of water in a suitable container
- appropriate defensive weapons
- lots of pink materials (paint, ties, confetti, etc.)

4. Upon arrival at the Math Building, the engineers are to be herded into either MC2065 or MC2066. Both rooms should be prepared for defensive action.

5. No defensive action is to be taken until the entire invasion force is contained in one of the aforementioned large rooms.

6. Students doing battle with the Engineers are to dispose of their containers of water and other materials liberally among the invasion force. Refills are encouraged.

7. The Ridgid Tool is to be confiscated by the highest-ranking officials of MathSoc present, and to be subsequently paraded around the Engineering buildings by a large task force of mathies, along with the Natural Log and the Pink Tie.

8. Captured engineers are to be treated under the conditions of the Geneva Convention. MathSoc shall disclose the identity of the hooded engineers to which the Ridgid Tool was attached at the time of attack and publish the full account of the attack in mathNEWS.

If the student is not matched with an employer as a result of this, then there are the "second round" interviews. Co-Ordination and Placement will attempt to match up the unmatched students and employers. After all this, at least 90% of the Math co-op students should have an employer. (Actually, before the current (past?) recession, this used to be more like 95-99%. -ed.)

Finally, there is the work term itself. There is an immense variety of jobs that co-op Mathies may have, particularly in Computer Science. Your work experience may be in traditional Chartered Accountancy, or in state-of-the-art Computer Science. During your work term, you will have to write a work term report. This report is explained more fully in the handbook, "Guidelines for Writing a Work Term Report" which all co-op students should have.

You, the co-op student, will join with hundreds of eager students on an educational experience unmatched by almost any other university in the country. Good luck in UW, and in your work terms!

Dave Leibold

Scavenger Hunt

Scavenger Hunt! Retrieve parts of the campus to win. Yes, you too can become a sly, cunning thief by participating. This event is sure to be the greatest event of Orientation Week! Come out for a super time.

Fresh Frosh's First

By the time you reach the end of Wednesday, September 8 in your first week at university, you will have had the joy of your first group of lectures and your first exam here at Waterloo. With those two things out of the way, it's time to enjoy yourselves. As soon as your exam lets out, hop upstairs to the third floor lounge where your MathSoc Orientation Committee is holding a coffee house. There's free coffee, donuts and hot chocolate for all frosh. Your Big Brother or Big Sister will be there looking forward to meeting you. We'll see you there! Don't forget your Pink Tie!

ρolly NOMIAL

Once upon a time (1/T) pretty little Polly Nomial was strolling across a field of vectors when she came to the edge of a singularly large matrix.

Now Polly was convergent and her mother made it an absolute condition that she must never enter such an array without her brackets on. Polly, however, who had changed her variables that morning and was feeling particularly badly behaved, ignored this condition on the grounds that it was insufficient and made her way amongst the complex elements.

Rows and columns enveloped her on all sides. Tangents approached her surface. She became tensor and tensor. Quite suddenly, three branches of a hyperbola touched her at a single point. She oscillated violently, lost all sense of directrix and went completely divergent. As she reached a turning point she tripped over a square root which was protruding from the erf and plunged headlong down a steep gradient. When she was differentiated once more she found herself, apparently alone, in a non-Euclidean space.

She was being watched, however. That smooth operator, Curly Pi, was lurking inner product. As his eyes devoured her curvilinear coordinates, a singular expression crossed his face. Was she still convergent, he wondered. He decided to integrate improperly at once.

Hearing a vulgar fraction behind her, Polly turned around and saw Curly Pi approaching with his power series extrapolated. She could see at once, by his degenerate conic and his dissipative terms, that he was bent on no good.

"Eureka!" she gasped.

"Ho, ho," he said. "What a symmetric little polynomial you are. I can see you're bubbling over with secs."

"O Sir," she protested, "Keep away from me. I haven't got my brackets on."

"Calm yourself, my dear," said our suave operator. "Your fears are purely imaginary."

"I, I..." she thought, "Perhaps he's homogeneous then."

"What order are you?" the brute demanded.

"Seventeen," replied Polly.

Curly leered. "I suppose you've never been operated on yet?"

Fantasy

I pulled up to my reserved parking spot at work Monday afternoon and walked into my panelled, carpeted office. I sat down in my high-backed chair in front of my 3279 terminal and signed on. Immediately the vice-president came into my office.

"Good afternoon, sir," he said.

"I haven't decided on that yet. What can I do for you?"

"Well, sir, there's this boor that seems to be vomiting all over your Royce."

"Why didn't you tell me sooner?" I said, as we ran out to the parking garage.

When we arrived I saw an old friend of mine sitting by my Rolls-Royce crying. He had graduated from my high school four years before I had. I asked him what was wrong.

"What's wrong? You're asking me what's wrong? I'll tell you what's wrong. This is my sixth work term, right? I'm in civil engineering, right? Well, I was told I'd have no trouble finding a job for any work term. This is my sixth work term I've spent being unemployed. And you, a frosh CS major, get a job as president of a high-tech multi-national corporation. It isn't fair!"

Just then I heard, "M. T. Mathie to the paging desk please. M. T. Mathie, paging desk." It was time to come back to my senses and go to my job interview.

Anonymous

"Of course not," Polly cried indignantly. "I'm absolutely convergent."

"Come, come," said Curly. "Let's off to a decimal place I know and I'll take you to the limit."

"Never!" gasped Polly.

"Lncsch!" he swore, using the vilest oath he knew. His patience was gone. Coshing her over the coefficient with a log until she was powerless, Curly removed her discontinuities. He stared at her significant places and began smoothing her points of inflection. Poor Polly. All was up. She felt his hand tending to her asymptotic limit. Her convergence would soon be gone forever.

There was no mercy, for Curly was a Heaviside operator. He integrated by parts. He integrated by partial fractions. The complex beast even went all the way around and did a contour integration. What an indignity to be multiply connected on her first integration! Curly went on operating until he was absolutely and completely orthogonal.

When Polly got home that evening, her mother noticed that she had been truncated in several places. But it was too late to differentiate now. As the months went by, Polly increased monotonically. Finally she generated a small but pathological function which left surds all over the place and drove her to distraction.

The moral of our sad story is this: If you want to keep your expressions convergent, never allow them a single degree of freedom.

Sleeping Accommodations

This little description of courses is meant to give you, the frosh, a student's-eye view of what looks so good in the Undergrad Calendar that most of you take from your high school (that's how I got my 82-83 calendar--by dropping into my high school while I was on work term--WJJ). These are very opinionated and just provide a brief description of what isn't mentioned in the calendar. Do not let this influence your choice of courses (much) during your academic career at UW. (But don't say we didn't warn you!) Remember, 12 of your 48 half-courses (if you are in Honours Math) must be electives.

Here are the courses that you must take in first year, the core courses, if you will:

Math 130 A/B

First Year Calculus follows from Grade 13 material. In the first term, you will learn how to differentiate, but you will learn how to do harder expressions. You will also learn some neat theorems, some of them involving derivatives. Even though Grade 13 material is reviewed, don't be fooled; the material is sometimes intense.

In the second term, you review integration, and you will learn more neato theorems, many of which facilitate easy integration of complex expressions. Material on numbers series and sequences is covered as well.

Math 134 A/B

Algebra in the first term is vastly different from what you have learned in high school. You will learn how to solve Diophantine equations, and you will be subjected to a barrage of strange theorems.

Second term Algebra is more like the stuff you learned in Grade 13 Algebra, since most of the course deals with vectors and matrices. Some of the material can get quite deep, so be sure that you are not too complacent with the material.

CS140

This course is offered in the M0 version (programming in Fortran language) or M1 (Pascal language). This is a course in computer problem solving, where you will get to create all kinds of neat programs on the hideously inefficient system known as WIDJET, or on the hideously bug-laden SuperPETS. The material is relatively easy; the midterms are vicious killers (i.e. you write a three hour exam in 90 minutes (are you sure it was not the other way around? I had no problems finishing on time. -ed.)) The course deals with very practical, interesting material such as simulations, zero-finding in a function, area finding and much more. (SECOND OPINION: I didn't think the material was interesting at all, and neither did my instructor - he used to recite from slides in a sing-song voice ("And this slide is diagram 4.5...") - however, I took the Fortran version, and I already knew Fortran - to each his own... -dwt (the Pascal version is not much better -ed.))

The following courses are electives that students may take during their career at UW.

CHEM 123/124

These two courses are the Introductory and Organic Chemistry courses open to Math students at UW. A lab which is optional for Math students is available to supplement the class work. The first term of the course is not that hard; a lot of this material just expands on theories you have learned in Grade 13 Chemistry. The Organic Chemistry course (124), requires a lot of memory work, however, hence a keen mind for Chemistry might be useful in this course. (The labs can help, too, even if you consider the three hours per week which you would lose as a result.)

PHYS 121/122/162/163

The Introductory Physics course 121/122 (or 162/163 for real die-hards) are two more elective half-credits available to Math students. The Physics text weighs a ton, but at least it's good for both terms of the course. Incidentally, this lecture is normally held in PHY 145, a lecture hall which contains seating which forces you to write on your lap. If you enjoy deciphering your notes and sustaining a generous chiropractic bill, take Physics. Like Chemistry, there is a lab in Physics which is optional for Math students. (The 162/163 version is more fun, as you get to play with IBM PCs, but you better be prepared to relate to accelerating reference frames etc. -ed.)

PHIL 140

This course is regarded as one of the traditional bird courses for Math students, especially Computer Science students. "What is it?" you ask. Well, it's Aristotle, it's Plato, it's Superman...NO, it's Formal Logic. The reasons for calling such a course Philosophy are too complex and beyond the scope of this article, but you are well-advised to take this course. Lectures are often held in the evening; it will not only bring your overall average up, but it will also cure your insomnia.

SCI 238

This course is called Descriptive Astronomy. It is a basic introduction to the mechanics of the solar system, the workings of stars and an improvement of your average mark. Don't let the "2" in the course number throw you off; this course can be done with just Grade 11 Physics and Grade 13 Mathematics. If your professor happens to be Dr. Kim Papp, you will be in for a very good time during lectures. One comment remains to be made: the textbook is worth $34.00 (at least it was this summer). If you can find a used one for sale, buy it.

MTHEL 100

This course is taught by Mr. R. G. R. "Barney" Lawrence, QC, and is an introduction to contract law. The course itself is as interesting as you make it, and you do learn a lot about what you are actually doing when you sign a contract. What you don't know can hurt you in a legal situation. There are one or two assignments, a midterm and a final exam to the course, and lectures are usually held from 7 to 9 pm once a week.

ENGL 208B

This course, called "Science Fiction", is one of the many courses that the English Department offers in an attempt to get students from other faculties (this means you) interested in English. One science-fiction novel is assigned for reading each week; during class hours, the novel in question is discussed. (Some of the novels that were on the reading list when I took this were: "To Your Scattered Bodies Go" by Philip Jose Farmer, "Childhood's End" by Arthur C. Clarke, "The Moon Is A Harsh Mistress" by Robert Heinlein - in short, your basic science fiction starter set.) A good course to take if your math workload is heavy - it's not the easiest course on campus, but it's probably one of the most enjoyable.

SCI 205

This course is titled "Physics of High Fidelity", and is commonly known as the "stereo course." It is taught by prof. Vanderkooy, who loves demonstrating various (more or less) hi-fi equipment in class. The course is really quite interesting, and there is a lab once a month where students may bring their equipment and have it analyzed. There are no assignments, two midterms and a final (all multiple guess), so the workload is not that heavy, but if you want to get in, be early, as the class fills up very quickly.

Frosh Dictionary

This dictionary is to introduce you to some of the terms
you may or may not encounter during your first term at UW.
Anything that is not explained well enough here will be when
you arrive or when you experience it yourself.

Watpubs -mobile Bombshelters.

the Bun -aka Honeywell, Honeybun...it's real name is
Honeywell 66/60 (actually, after the upgrade its a 66/80)
but it's called everything else but. It's one of the Math
Faculty Computing Facility's computers (which helps produce
what you are holding in your hand).

Endless Loop -See Loop, Endless.

FASS -an on-campus theatre group composed of Faculty,
Administration, Staff and Students (hence FASS). The most
fun thing a group of people can do.

Theatresports -an improvisational challenge game between two
teams on a stage. Neither team knows what they are going to
do until they do it! (Occasionally, not even then... -dwt)

WATSFIC -University of Waterloo Science Fiction Club.
Usually the site of many a discussion on past glorious D&D
campaigns.

D&D -Dungeons and Dragons, a fantasy game. A variation is
Advanced Dungeons and Dragons, usually abbreviated to AD&D.

Co-op student -a gypsy with books

Son of a Bun - the forthcoming DPS8 computer by Honeywell
which should be installed this Fall.

Kitchener Transit -that ninety-minute wait for the bus
during the first, second, third,..., second-last and last
snowstorms of the year.

The Warriors Band -one of THE bands in Canada; a musical
group bigger than the Beatles (numerically speaking).

Guelph -the sound a dog makes as it tosses its cookies.

Recursion -See Recursion.

Frosh -A general term applied to first-year students,
including YOU.

Real Mathie -Read this paper carefully, slowly digesting the
information, if you want to be one.

Imprint -the official student newspaper (something to take
into boring Friday lectures).

Chevron -the former official student newspaper, and one of
the last surviving forums for Marxist dialectics.

Turnkey Desk -a place in the Campus Centre where one can
obtain change, magazines or games (just leave your student
ID at the desk) and information - the most helpful people at
this university.

SCuMS -Student CMS. Also a term applied to its designers.

Loop, Endless -See Endless loop.

mathNEWS -something to work on if you are insane, want no
social life, have nothing better to do, or any combination
of the three.

Waterloo West -the University of Victoria.

Dinosaurs

Computing Services Orientation: The computer can assist you
in your work in a variety of ways. For example, you can use
it for calculation and data analysis, for turning
manuscripts into finished papers, or for marking exams and
maintaining class marks. We will give you an overview of
the various general-purpose and application-specific
languages that are commonly used. We will also take you on
a tour of the DCS facilites, show you where everything is
and how it works, and answer questions you may have about
which DCS course(s) might best suit your needs.

The dates are Sept. 12-16, 1:30 pm -ed.

Zoo -one of Waterloo's two undergrad residences (Village One
and Village Zoo).

Village 1 -like Village 2 except single rooms and a higher
shower stall/person ratio.

Village 3 -Sunnydale

Cockroach Towers -also known as Waterloo Towers, located at
University and Phillip Street, and known for its profusion
of bugs, insects, roaches, spiders, ants, silverfish, and
other assorted creepy-crawlies. Not for the squeamish.

Village Food -something which serves to illustrate the
difference between well-cooked and cooked well.

WIDJET -a curse; short for Waterloo's Inefficient Defective
Job-Eating Terminals. (Also, that ninety-minute wait for
your program during the first, second, second last, and last
assignments of the year).

IBM Itty Bitty Machines, I've Been Moved!, Indestructible
Bowel Movements, It's Better Manually, Intercourse is Better
than Masturbation,...

tutorial -an extra hour (or more) a week per course where
you can get help from a prof or tutors which no one goes to
anyway (but it helps if you do).

hack -someone who deprives him/herself of all physical needs
for the pleasure of sitting at a computer terminal.

Stud -Dr. Ian J. McGee, the Associate Dean of the Faculty of
Mathematics and an all-around nice guy.

The Natural Log -not the integral of 1/x dx or a logarithm
to base e, but the present MathSoc mathscot.

The Pink Tie -the original MathSoc mathscot, stolen in 1978.
Still the unofficial symbol of all mathies. **MathSoc** -the
Mathematics Society.

DON'T PANIC

Hitch-hiker's Guide to the Campus

As a Waterloo student, you will want to be familiar with the various landmarks on campus. Thus, the following guide has been prepared to help you discover some of the more popular places here at UW.

Mathematics and Computer Building

A humongous structure in which you will spend much of your university years. This giant, grey block of concrete contains lecture rooms (you will be most familiar with rooms 2065 and 2066 which are the largest lecture rooms in this building), lounges, offices, and computer rooms. On maps, timetables, posters, and other things, the Math building is abbreviated as MC (for example, MC 2065 means room 2065, Math building). On the third floor, you will find the Undergraduate Lounge (in which the famous Coffee and Donut Stand is located), club offices (Watsfic and CSC), the MathSoc Office (MC 3038), and other rooms, not to mention the mathNEWS Office. The well-known "Bun" and VAX computers are located on this floor, too. The fourth floor contains the Engineering, Mathematics and Science (E.M.S.) Library (but be careful! Some stairwells and elevators will lead you to a mysterious section on the fourth floor where you can't reach the E.M.S. (only south-west stairs/elevators may be used)).

Campus Centre

This is also a very popular place on campus. The CC is known for its Turnkey Desk, which is staffed by (you guessed it) Turnkeys, who make change, provide coffee, provide information, etc. on a 24 hour a day basis. There are several meeting rooms in the CC, as well as the office of Imprint, the student newspaper, the Games Room (featuring games like Centipede, Space Invaders, and more) and the Bombshelter, the campus pub.

Dana Porter Arts Library

Otherwise known as The Great Sugar Cube in the Sky , the Arts Library is a huge, ten-storey building packed with books. This is the main library on campus, hence there is a lot of material of interest to all students, not just Arts students as the name may imply.

South Campus Hall ("South Compost Heap")

In this place, you can find the University Bookstore, the Open Door Gift Shop, a cafeteria and a few classrooms.

Health Services

In this quaint, white building overlooking Laurel Creek, you will find doctors and nurses tending to the medical needs of Waterloo's students. Health Services is your doctor while on campus, so drop in if you're sick, injured, or curious. You can also file your health insurance claims here.

PC USERS

IBM PC Users' Group

Do you own an IBM PC? Get to borrow one? Use one at work? Beg for free usage from friend and foe alike? Considering stealing one because you can't get your hands on one otherwise?

The PC Users' Group can help. No, we won't help you steal one, but you might well become familiar with one. The meetings, held once a month in the Math & Computer building, feature guest speakers, discussions, reviews and more. Also in the works are a public domain software library, and a commercial software survey, and a representative from IBM is present at most meetings. And yes, Virginia, there is a Santa Claus: no discrimination against PC-clone owners.

If you are still interested, drop by the September meeting, which will be in early September --- check the mathNEWS calendar in the back. And remember, you will end up using a PC sooner or later --- some CS180 sections already use them, as well as several upper-year courses. This is your chance to get a head start --- don't miss it!

Physical Activities Complex ("PAC")

You say you hate sports, so why should you care? OK, this is the place where 98.4383% of final exams are held, (aren't you already looking forward to that?) so you better at least find out where it is. Besides that, it has a pool, badminton, squash, racquetball, basketball, volleyball, weightrooms --- you name it. With your gold-and-white PAC card (that you received with your timetable) you can use the facilities for free. RAcquet rental is also available for a nominal charge.

Needles Hall ("Needless Hell")

This is a unique structure housing administrative offices for the Department of Co-Ordination and Placement, plus a small Careers Library and the office of the Gazette (or, more precisely, Information Services). If you are in co-op, you will be hanging out here much of the time during interviews. (See the Co-op article for more grisly details on co-op, and beware of the stairs!)

Security Building

The home of the campus lost & found, as well as the place where you can buy a term-long parking permit (be early as they run out quickly.) Further, this is the place to go to if you were stupid enough (ahem! -ed.) to park on the ring road and unlucky enough to get a parking ticket, and lucky enough not to have your car towed away.

Carl Pollock Hall

This is rumoured to be the home of the infamous EngSoc and Enginews. However, no sane representative of Homo Sapiens has volunteered to enter these dark depths, so this claim remains unverified.

FASS

Well folks, you're going to have to get used to writing quizzies. This university loves to pester you with piddling little tests that count half a per cent towards your final mark if you do well, but count as thirty black marks against you if you flub them. These annoyances are commonly known as quizzies. (Said one young lass to her professor, "If that was one of your quizzies, I'd hate to see one of your testies.")

At any rate, in the interests of preparing you for the many, many quizzies you'll be writing in the next three, four, five, or twelve years, the FASS Theatre Company hereby offers you a SURPRISE quizzie that you must pass in order to be admitted through the front gates of the university. Names and mug shots of those who flunk will be given to all campus security guards along with orders to shoot to kill.

Good luck!

Questions

1. What four-letter word begins with "F" and refers to a way to enjoy yourself with other persons?

2. What enjoyable but unnatural act is said to cause insanity, blindness, and hairy palms?

3. Is it possible to expose yourself to hundreds of people in the dead of winter without getting frostbite?

4. What's the difference between a make-out artist and a make-up artist?

5. Where's the best place on campus to go for a good time (wink, wink, nudge, nudge)?

Well, that's the test. Now put down your pencils, pass your test to the person behind you (last person in the row to the person in front), and let's get ready to mark. Here are the answers.

Answers

1. The word is FASS. FASS stands for Faculty, Administration, Staff, and Students, the people who get together every year to put on the funniest show on campus. You can enjoy yourself watching it this February, but you can enjoy yourself even more by coming out and being part of the madness. The organizational meeting is Tuesday, September 22. Watch for our posters to tell you where it's going to be. By the way, when we say "meetings", we almost always mean "parties". We'll come back to those later.

2. The unnatural but enjoyable act is writing for FASS. You see, before the show goes on next term, we have to pull together a script filled with jokes, puns, and songs. If you've never written before, don't worry; almost everybody else is in the same boat. Even if you aren't interested in putting pen to paper, watch for our posters and come out to our writers' brainstorming sessions, just as an ideas person. Don't worry about the side effects of becoming a FASS writer -- the insanity is fun, and the blindness and hairy palms only begin to develop after a few years' overexposure. As compensation for these threats to your mind, all writers will be able to attend FASS's parties (we'll come back to those later).

3. Yes, it is possible if you're getting exposure by being onstage with FASS. Acting experience is no prerequisite for being part of FASS's cast. What you need is the enthusiasm to devote your spare time to rehearsing and learning lines. In return for your devotion, you get to come to all of FASS's parties (we'll come back to those later).

4. We don't know what a make-out artist is (well, maybe we do, but we aren't saying), but a make-up artist is just one of the people who works backstage each year for FASS. We need people to work on make-up, costumes, sound, lighting, props, carpentry, publicity and advertising, and lots of other stuff. We also need people to organize FASS parties (we'll come back to those later).

5. Where's the best place on campus to go for a good time? By now, you should have guessed that good times are to be had for all at our FASS PARTIES! In the fall, there may be such things as a coffee house, a hay ride, roller skating, and what not. In the winter, FASS will have lots of real live parties paid for in whole or in part by the proceeds from the show itself.

The point is that FASS is not just an organization that's dedicated to putting on a funny show; it's a group of folks who are interested in having fun and getting to meet other people on campus. If you're interested in the same things (and who isn't?), look for the FASS posters and come out to our organizational meeting (party). It could be one of the best moves you make at university.

THE ETHANOL SONG

Lyrics by TTWIAHA (you'll find out who he is soon enough)

When I was young
It seemed that life was so wonderful,
A miracle,
Oh it was beautiful, magical.
And every morning at three
I would wake up so easily,
Oh breezily,
Moving quite steadily.

Then they sent me to school
To teach me how to drink alcohol,
Oh, have a ball,
Oh, stand up tall, drink it all.
Soon my eyes didn't work
Started seeing so blurrily,
Oh, terribly,
I was throughly smashed you see.

Chorus:
There are times
When all the world spins round
I fall down to the ground
I can't see worth a damn.
Won't you please, please give me a kind word
I know it sounds absurd,
But please tell me where I am.

So now, watch what you drink,
Or you'll have trouble getting out of bed
Eyes of red,
Oh my head, feet like lead!
You'll have to sign with AA,
Or you become like an engineer,
Oh, gulp the beer,
Oh, brain cells will disappear...

Oh, take, take it, yeah!

Apologies to Supertramp would be completely inadequate.

AM I PEOPLE?

NO... YOU ARE A CHICKEN!

DO CHICKENS COME FROM PEOPLE?
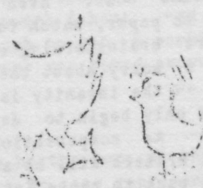
NO! CHICKENS COME FROM EGGS.

ARE EGGS BORN?

NO! EGGS ARE LAID

ARE PEOPLE LAID?

SOME PEOPLE ARE, OTHERS ARE CHICKEN!

?

E.C. The Extra Curricular

Where did you say you were going to school? Waterloo? Where is that? Oh, I see ... way out there ...

Actually, Kitchener-Waterloo is not that bad a place to live. There is quite a bit to do, especially when you consider all the events organized by MathSoc and other on-campus societies. It's not quite like T.O., but it certainly is better than a place like Guelph (but then what isn't (how about WLU (nah ... not even WLU is as bad -ed.))) Do you own a TV? Do you have time to watch it? More importantly, will you have time to watch it when the term gets underway. If so, there are a lot of things available. Even without a cable, you can get CKCO (13, Kitchener), Global (3, Toronto), CHCH (11, Hamilton), CBLT (5, Toronto) and CFPL (10, London). Cable channels total eleven, and that climbs to twenty-one should you have a converter. If your last name is Getty or Rockefeller, there are also a few pay-TV channels available.

As to radio, there is CKMS, the campus station. You might as well listen to it at least occasionally, since you are paying for it, $3.50 per term --- check your fee statement. Try it, most people either love it or hate it. They offer a lot of variety, from BBC news to WPIRG to Leaping Lesbians. K-W also offers CFCA (105.3, middle-of-the-road) and CKGL (96.3, country & western.) Most students, though, aim their antennas towards Toronto. In that direction you can find CFNY (102.1, new music) as well as the archrivals Q107, "Toronto's Best Rock," and CHUM-FM, "toronto's Ultimate Rock." Take your pick. CKO, 99.1 in Toronto, provides 24-hour news for you addicts.

If, for some bizarre reason, you decide to listen to AM (maybe your Carver FM tuner is in service) here is a short list: For music, try one of 570 CHYM, 1150 CKOC, 680 CFTR or 1050 CHUM. If you want sports, try 1090 CKKW --- they broadcast the Leafs, Jays and Rangers.

As to printed matter, there is lots of choice. Naturally, the prime cuts are to be found in mathNEWS, published by mathies for mathies (usually) every second Friday (every Friday,if we're lucky) when it will be available throughout the Math building. Imprint is the Fed paper, actually quite good, but it's just not the same... There is also Enginews, which you already have heard about or else will not want to. Off-campus we have K-W Record, as well as the three Toronto papers: the Sun, the Star and the Globe and Mail. These are all available at boxes and stores throughout waterloo. The Record and Globe are also available for free loan at the Campus Centre Turnkey desk, and the rest as well as a host of other Canadian and foreign newspapers may be found in the Arts Library. However, we have a gut feeling that you will always come back to mathNEWS, hungry for more light-hearted satire and entertainment. So it goes.

For those of you that have succeeded in exceeding Mr. Bill's 19-year age limit before he raises it, here are some of the places to check out. First, we should mention the Bombshelter, also known simply as the CC Pub, which is operated by the Feds. Although it might not be the greatest place on earth, the prices are quite reasonable, and you can meet lots of other students (frosh?) who are also trying to drown the memory of that last calculus midterm.

WLU, in case you want to associate with authentic low-life, has the Turret, which really isn't all that bad. Other bars range from Bensen's in downtown Kitchener to the Breslau Hotel, from the Waterloo Inn to the Coronet to the Kent in scenic uptown Waterloo. And thou shalt not forget the great bashes organized by MathSoc, including pub crawls (the best way to find the best pubs!) and Wine & Cheeses. Make sure you check them out. Of the other societies, you should definitely check out at least one of the Kin pubs. You'll know why when you get there...

There are also a large number of movie theatres (even drive-ins) as well as a large number (20? 50? 100? (who cares? -ed.)) of fast-food places. For real food, check out the Restaurant Review in this and future mathNEWS.

For sports, the best bet is the PAC. It contains eight squashand two racquetball courts, a pool, weight room, basketball and volleyball courts, and more. And it's free with your PAC card! There are also a number of public (i.e. free) tennis courts scattered throughout the K-W, many of them at high schools. Check with Kitchener and Waterloo parks and recreation departments for details.

Tom Watts

REAL MATHIES

When you get to campus, and experience Math for yoursef, you can tell us what a REAL Mathie is. You can agree, expand upon, or disagree with the entries in Real Mathies. Just submit your answers to that pressing question: "What is a Real Mathie" to mathNEWS. Like all submissions to mathNEWS, you may deposit it inside the black box on the third floor of the Math Building, across from the C & D.

Real Mathies :

* don't program in COBOL
* are a subset of complex mathies
* read mathNEWS whenever it is available
* live lns and prosper
* thrive on 8 hours sleep...per week
* never drink decaffinated coffee
* never drink decaffinated cola
* never drink decaffinated anything
* know what GEB stands for and have read it
* can handle partial differential equations 3 lines long with no trouble
* can form a nilpotent matrix at a whim
* don't need to take off their shoes and socks to count to twenty.
* have not only read GEB (respectful pause) but can quote from it
* can draw perfect straight lines (freehand) even when they are too bazooed to walk one
* have a VDT ... (a Video Display Tan)
* don't acknowledge other faculties
* don't get complexes over complex numbers

how to read mathNEWS

This article is hard-hitting and straight to the point, unlike those Artsie paper articles that pussy-foot around any issue. You may have noticed that whenever this illustrious paper is mentioned, it is written mathNEWS, and not mathNEWS or MathNews or even Mathnews. This paper is ten years old and has long been a major influence in the Faculty, at one time even more powerful than MathSoc (which thus does not usually get the darker type). We are here to inform the students of the Faculty of Mathematics, and serve as an effective forum for the views of the students, as well as a cheap form of advertising for MathSoc (although recently their ads have acquired an inexplicable tendency to appear upside down (no matter how hard we try to position them properly (and if you see what our printing costs are now, cheapness is becoming questionable (still with us this far in?)))).

What just occurred at the end of the previous paragraph is called nested comments, another important feature of this publication. The first comment is on the article, the second is on the first comment, the third on the second, and so on. mathNEWS (notice that it isn't even capitalized at the start of a sentence (real neat! (what era was that comment from? (high school ankle-biters (a.k.a. Grade nine students (Hey, don't pick on them, that's where my intelligence puts me (who let the engineer in here?))))))) uses these to better explain various articles and concepts, as well as to cover slow points. They do tend, however, to wander from the topic very easily (like any average prof).

What we call news is not always news (Editor's Note(these also occur): but that's not news). Such things as rambling fiction, senseless babble, and a list of current events make up mathNEWS each issue, as well as our regular thank you to our contributors, the MASTHEAD. If you are looking for important things in an issue, here is what to read:

** Front page (if any)
** The calendar (last page)
** Masthead (toward the end)
** Real Mathies
** Lord of the Disks (when available)
** Matt the Mathie
** Feedback (or sometimes Foodback)
** The ads (everywhere)
** Young Frank Einstein
** Shtuff from MathSoc (this is listed in order of priority)
** Page numbers (often quite original)
** Black lines (for boring lectures)

If you are looking for unimportant things, then get the Chevron.

There's another can of worms. The Chevrag (notice the name change; this is how most people think of it) was originally the campus student newspaper until a group called the Anti-Imperialist Alliance (AIA (communist ideologists (hiss, boo, hiss))) took over much of the key staff positions and turned it into a propoganda vehicle for their cause. They were finally removed as the campus paper in 1977 by a student referendum and later Imprint was accepted as their replacement. Unfortunately, the 'Rag still publishes from somewhere off campus and still shows up in our hallowed halls with their spoiled-kid whimperings about western actions.

Imprint is a good quality paper, as I and many other editors of mathNEWS have discovered when we see many of our best staff members run off to work with them. However, Imprint lacks some of the freedom existing in mathNEWS to write mainly what comes to mind, rather than major news stories on campus. At mathNEWS there is no regular staff to go out and report the news, so we let it just come to us. We do invite people to get involved with us, however, as we have quite a good time putting this paper together on alternating Tuesday nights, and the more here, the merrier!

Scooter!

?!?
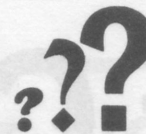
What To Bring To University

You, the young frosh-to-be, will probably be faced with a new style of living if you choose to live in residence. First of all, here is a good idea of what you should bring to the residence: Your clothes, towels, toothpaste, toothbrush(es), combs, appropriate outdoor clothing (yes, winter isn't that far away), soap, umbrella (or something which will prevent you from getting drenched in rain as you dodge from class to class - weather doesn't care whether you have to race from the Math Building to the South Campus Hall). For classes, you should have notepaper, binders (to store the notes; you should have at least two large binders), clipboard, pens, pencils, erasers, rulers (fancy compass/ruler sets, although not that necessary, might be useful). Heavy on the pens and pencils, though, those notes consume a lot of ink. Optional stuff to bring: Stereo, walkman type portable stereo, or some kind of radio (if you have a loud stereo, you might want to enter it in a stereo war). If you like television, you can bring your own TV, but there should be TV lounges in all the residences. Games such as chess, Othello, etc. may be brought, too. However, you can borrow a game from the Campus Centre Turnkey Desk if you don't have many games yourself. Just ask for an available game and leave your student ID card at the Turnkey Desk while you play. Your own set of books (fiction, nonfiction...whatever interests you) can be useful to you. Rubik's Cube is OK, but it's nowhere near as popular as it was many months ago. You might think of of lots of other things you might want to bring to residence if we haven't mentioned them already.

Residence Life

When you get into residence, you will have a set of keys to get into your room, the lounges, etc. Guard these keys with your life; their loss can mean great anguish (and a loss of $25.00). If you have a roommate, discuss the living arrangements, personal habits, etc. between yourselves since you will be spending four months of your life cohabiting with him/her. In addition to this, become familiar with the dining hall procedures (use of meal tickets, which foods to take/avoid). Investigate your surroundings and acquaint yourself with the others on your floor (or elsewhere in the residence). Get involved with the Orientation activities at your residence, too, and participate in the Math , Federation (of Students), or other club Orientation stuff, too. Start you university years off on the right foot and get involved. Just don't let involvement affect your studies too much. If you find you are failing even one of your courses, re-evaluate your extracurriculars.

WATSFIC

Watsfic - the University of Waterloo Science Fiction Club.

Dedicated to science fiction and other related interests of the genre, we maintain an extensive and varied library of science fiction and fantasy. Club activities include: weekly meetings, adventure and board gaming, and other special events, such as video nights and tournaments.

Whether you are an avid reader, or a serious gamer, Watsfic has something interesting for you. We welcome new members and invite them to come to our meetings. It's a fascinating place to meet people with the same interests as yourself. If you have any questions, or you just want to drop by, our office is located in the Math & Computer Building, Room 3036.

frosh ADE

"What shall I bring to class?", the young frosh may ask. "Where is my class? What textbooks am I to buy?" These, and many other questions shall be dealt with in the sentences following.

First, you should have a computer-printed course schedule, either mailed to you (if you pre-register), or picked up at Registration (in those great big line-ups every September). Check the times and rooms of each class and mark this information in a blank scheule form (such as the schedule which appears at the end of this mathNEWS). During your Orientation Week, try to visit all the buildings where you will be having your classes and try to find your way around the university. When classes actually do begin, you should have no problem finding the right room.

All you need to bring to class in most cases is a small clipboard full of paper. You will be taking notes, and possibly collecting some handouts such as course descriptions and assignments. Write down the stuff the prof writes on the board, noting important material. Eventually, you will be accustomed to writing theorem, proof, theorem, proof, theorem, proof... Your biggest enemies are the brevity of your attention span and your capabilities in deciphering your notes, but you should have no problem in adapting to the lecture format. The only problem you might have is trying not to fall asleep during calculus or algebra.

For textbooks, you should check the University Bookstore which will have a list of the textbooks needed for each course. You should check for a list of textbooks for the first-year math courses and major electives in your registration package, too. If you are still confused, the professor will also indicate the textbooks for the course on the first day of the class. When buying textbooks, have a credit card, a lot of traveller's cheques or lots of money on hand because brand new textbooks can cost $100-150. You may wish to examine the Used Books Store in the Campus Centre basement for cheaper, used textbooks. Individual students may also have used texts for sale, hence it is a good idea to check bulletin boards.

Then, there's the tutorial sessions, where you may ask experienced students or the professor himself for some help with the nagging questions. You are well advised to attend, if only to collect the assignment you handed in the week before. For Calculus and Algebra tutorials in first year, you should bring your text, notes, and assignment to work on. For Computer Science tutorials, you should have your text or other reference handy. In all tutorials, ask the prof or a tutor if you're confused. Tutorials are your best chance to clear up any problems that you may have in your classes.

There's not much to attending the classes, taking the notes and finding the right books. The only hard parts are the tests and assignments. Good luck.

Dave Leibold

The Warriors Band

What is black, white, gold and red, has from two to fifty legs and makes some of the most interesting sounds in the world? Well, one possible answer is the University of Waterloo Warriors Band, and this is the only answer which we are concerned with.

The Warriors Band has been one of the loudest musical institutions on this campus since its inception in 1966 under Chief Centurion Dave Greenberg. Since then, it has gone through many highs and lows (mostly lows, but the band didn't seem to notice). Until recently. With regular practices (only an hour a week) the band has been able to improve its repertoire to a two-digit number of pieces and has (unofficially) won the CIAU Band Championship for the past three years.

The Warriors Band is a collection of talented musicians and non-talented musicians alike, along with the odd non-musician (like me--that's why I am the chief percussionist, which also immediately explains why we are literally one of the "off-beat" organizations on campus). We play at football games, basketball games, fund-raising kickoffs, computer shut-downs, building openings, ship launchings and royal weddings (the latter requires two weeks notice). The Band has been on television numerous times (Dick Beddoes loves us), and is now the official Canadian men's basketball team pep band, under the name of The Canadian Imperial Band of Commerce.

As said before, no musical talent is necessary to play in the Warriors Band. All that is required is enthusiasm, and a loud voice for baiting the referees. Your own instrument (we do need help in our string section) is useful, but not essential as we have some of our own.

Come on out to our first practice session (watch for posters concerning date and time). The worst thing that could happen is having a cruise missile track down your sousaphone.

BIG BROTHER IS WATCHING YOU!

In the orientation package you received, along with your copy of mathNEWS, there should be a notice telling you who your big brother/sister is. If you can not find this notice, let us (MathSoc -ed.) know when you buy your pink tie. The people selling the ties will find out for you who he/she is.

Your big brother/sister is a second, third, or fourth year math student who is a member of the MathSoc Orientation Committee. He/she is there to help you to get to know Waterloo. During the first few days you will probably have a lot of questions, so ask your big brother/sister. He/she is there to help, and will answer your questions, help with your problems, or direct you to someone who can help you.

Come out Wednesday afternoon and meet your big brother/sister. If you are unable to make it there, come to any of the other scheduled MathSoc events, and he/she will be there.

Barb Lundholm
for MathSoc Orientation

The Math Corner
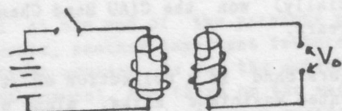
Theorem: $r\theta = \theta$

Proof 1:

(Proof by Confusion)

Proof 2: Assume $r\theta = \theta$
∴ $r\theta = \theta$
This does not contradict the hypothesis.
∴ $r\theta = \theta$
(Proof by Assumption)

Proof 3:

(Proof by Induction)

Proof 4: $r\theta = r\theta$
$r\theta = r\theta$
$r\theta = r\theta$
$r\theta = r$ 🙂
$r\theta = \theta$
$r\theta = \theta$
$r\theta = \theta$
(Proof Using the Laws of Absorption)

Proof 5: Define r to be 1
∴ $r\theta = \theta$
(Proof by Definition)

— Proof 6: It's intuitively obvious.
(Proof by Calculus Prof)

— Proof 7: It can be shown that $r\theta = \theta$.
(Proof by Algebra Prof)

Proof 8: At this point we ask a mathematician.
(Proof by CS Prof)

Proof 9: As will be shown in 4th year, $r\theta = \theta$
(Proof by First Year Prof)

Proof 10: Well, I can't find a counter-example.
(Proof by Apathy)

Proof 11: Drink a mickey of rum and a 12-pack of your choice and prove me wrong
(Proof by Imbibing)

Proof 12:

∴ $r\theta = \theta$
Q.E.D.

(Proof by this is an exam question that I haven't the slightest idea how to do, but I have to put in something, or I'll flunk, and if I flunk, they'll kick me out, and my parents don't wnat me back and who can get a job anyway, so I'd better put lots of squiggles and some∴'s and →'s and maybe I'll fool the bloody TA, who is pretty much out to lunch, and maybe, I get part marks)

Proof 13: There is no proof 13
(Proof by Monty Python Freaks)

Proof 14:
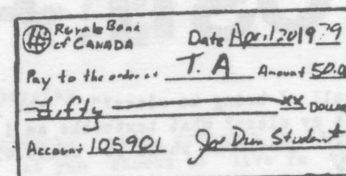
(Proof by Bribe)

Proof 15: My brother is a member of Hell's Angels and he agrees with whatever I say and I say $r\theta = \theta$ and you better not disagree with my brother if you know what's good for you.
(Proof by Intimidation)

Proof 16: I'm a prof and you're a lousy student, so IM right.
(Proof by Precedence)

Proof 17: The guy next to me put $r\theta = \theta$
(Proof by Neighbourhood)

Proof 18: As shown in <some non-existant but very impressive-sounding text book>
(Proof by Reference)

Proof 19: Trust me.
(Proof by Nixon's Theorem)

Proof 20: Have I ever lied to you?
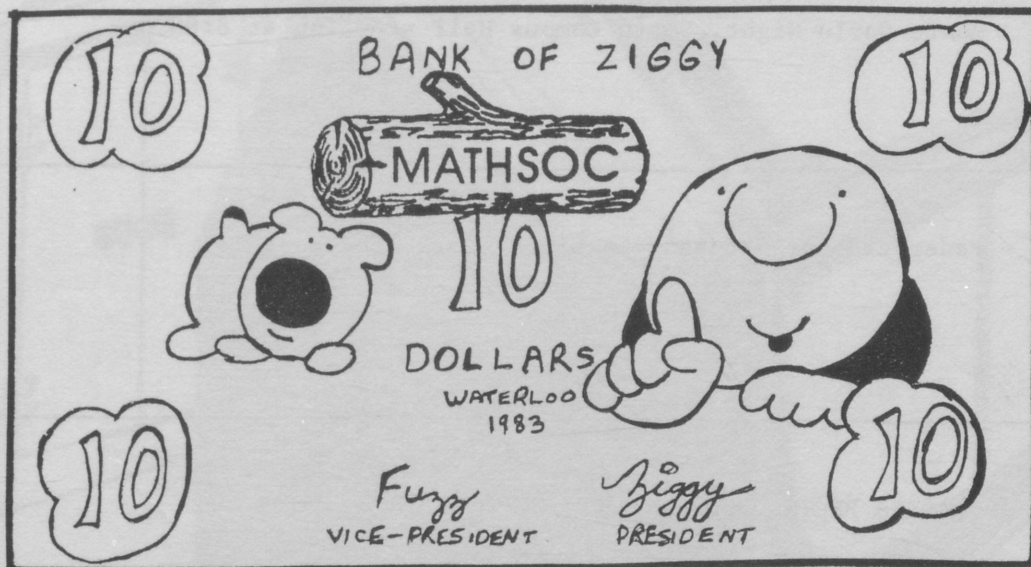(Proof by Jewish Mother)

MathSoc presents---

The Monte Carlo NIGHT

Saturday, Sept. 10, 1983

at South Campus Hall

includes : Blackjack
           Wheels of Fortune
           DJ
           Dancing
           Booze (one piece of ID is required)
           Much, much more

***** CUT OUT THE COUPON ABOVE AND BRING IT ALONG *****

ORIENTATION WEEK

Wednesday, Sept. 7	- ELPE in the PAC at night - Drop-in centre in the 3rd floor lounge (Math building) - "Fresh Frosh's First" after the ELPE, watch for details
Thursday Sept. 8	- Scavenger Hunt - Pub Crawl, meet behind the Math building - Fun Crawl, same place, soon after
Friday Sept. 9	- FRIDAY THE 9TH
Saturday Sept. 10	- Fun in the Sun, bus leaves at 10:00 am behind MC - Monte Carlo Night, South Campus Hall starting at 8:00 pm
Sunday Sept. 11	- Federation of Students barbique, watch for details
Monday Sept. 12	- CLASSES BEGIN (Uggggh!!)