FASS

This years FASS is entitled "SHIPS THAT FASS IN THE NIGHT". It will be in the Theatre of the Arts in Modern Languages. Showtimes will be:
Wed.   Jan. 31 8:00 $1.75
Thurs. Feb. 1 8:00 $1.75
Fri.   Feb. 2 7:00 $1.75
              10:00 $2.00
Sat.   Feb. 3 8:00 $2.00

Tickets will be available in the Theatre of the Arts box office starting January 24. This year's show promises to be as good, if not better, than previous shows so come on out and see it!

FASS!

mathNEWS

MATHSOC ELECTIONS

The following positions are open for the March 1979 - February 1980 term:
President, Vice President, Treasurer

For those who will be in these terms in September:

3 - 2nd year regular
2 - 3rd year regular
2 - 4th year regular
2 - 2nd year co-op
  A-stream
2 - 4th year co-op
  B-stream

By-elections for those in these terms now:

2 - 4th year regular 2 - 2nd year
co-op
  B stream 1 - 3rd year co-op
  A stream 1 - 3rd year co-op
  B stream

Nominations open:
  9:30 Tues. Jan. 30
Nominations close:
  4:30 Mon. Feb. 12

ELECTION: TUESDAY FEB. 27

OCUFA Teaching Awards

The Ontario Confederation of University Faculty Associations has a program to provide recognition to outstanding teachers in Ontario universities. Up to ten awards in the form of citations will be presented. Nominations are invited from any individual or group and may be made in any form . Sponsors should provide sufficient evidence, from as many sources as possible to make it clear that outstanding work has been done. A guidline to assist in the preparation of nominations is available from the OCUFA or your Faculty Association club.

Deadline for receipt of nominations is April 30, 1979. Letters of nomination may be sent to:
OCUFA Committee on Teaching Awards
40 Sussex Avenue
Toronto M5S 1J7
(416) 979-2117

Ruminations

The bigots took away the dignity and human rights of gays. I remained silent. I was not gay.

The bigots and sexists took away the rights and dignity of women. I remained silent. I was not a woman.

The bigots and racists took away the dignity and human rights of blacks, Jews, Pakistanis and other minorities. I remained silent. I was not one of them.

Now they are knocking at my door. When will it end?

It used to be that being a good politician depended on what you knew. Then it was not what you knew, but who you knew that counted. Now it's what you know about who you know.

A free press is vital because slaves would be too stupid to write the news.

-the gadfly

1
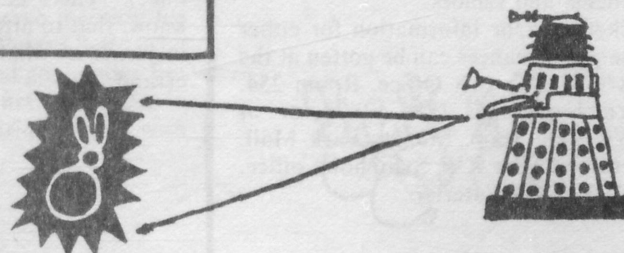
A Rebuttal

It looks like there was a big uproar about that racous toast that appeared on the last page of **mathNEWS** a couple of issues ago. I wrote that article on the Ottawa-Waterloo pubs and have something to say about its effect on **mathNEWS** policy. First of all, I'm not here to defend the toast. There can be little question that it was awfully rude and intentionally so. We sang that toast at almost every pub we went to, for no other reason than to be rude. So I can't really defend its virtue, except perhaps a lot of people think its pretty funny. Not moral but at least funny. So if **mathNEWS** wants to exclude such immoral articles in the future I don't have any objections.

Actually I thought it would be a good way to end off my story - with something that would capture the carefree, boisterous atmosphere of a pub. Realizing that the atmosphere of the regular **mathNEWS** article is somewhat different, I made sure that the editor read it, as well as some of the paper's staff so they would have a chance to censor it before it went to print. They chose not to. However, after publication, some complaints forced the editor to make some kind of policy concerning what is appropriate to print. Anything that is written purely for the sake of the "obscene" words or ideas they use will not be printed. I didn't really write that for the joy of being obscene but the point is well taken. What I really wonder at though is their judgement. The column *continued from page 13* in that same issue contained the following phrases : 'goddamn bloody fucking', 'fucking get laid', 'tight-ass love-

sucking sister', 'poor Mama, she never whored', 'Holy shit' and some other very gruesome ideas concerning 'peeling back the black skin off the heaving sores ...'. In my opinion, this article is quite clearly being obscene for the pure joy of it. It's not a news story, has no point it is wishing to make and the only value in it I can see is its shock value.

Part of the masthead of that same issue reads, 'Kate is whining now (hands off my body Kate!) about a missing period'. Hands off my body ? Is that really in very good taste? And also, is there an intentional hidden pun?

I should also like to point out that the previous issue contained 2 ads for the Rocky Horror Picture Show, a movie that celebrates transvestitism, canabalism, homosexuality, adultery, even homosexual adultery without the slightest twinge of conscious. One of the main songs goes on and on about how proud the hero is to be a transexual and then he blasphemes religous doctrine by creating a man with his own hands in a laboratory. Why? So he could have somebody to bugger, day and night.

If **mathNEWS** is serious about censorship, they should do it honestly.

rmmcmullan

UW ARTS NEWS

On Friday, February 2, the UW Arts Centre will present THEATRE BEYOND WORDS, Canada's finest mime troupe (according to the TO Star). The five member group will be performing at 8 pm in the Humanities Theatre. Tickets are still available at $6.00, $4.50 for students and seniors.

Sunday evening, February 4, same time and place, the Arts Centre will be presenting a concert by "Spain's Royal Family of Guitar", the ROMEROS. Tickets can be purchased for $7.00, $5.50 for students and seniors.

Tickets and/or information for either of these performances can be gotten at the UW Arts Centre Box Office, Room 254, Modern Languages (885-4280), or at Bishop's Style Shop, Stanley Park Mall, Kitchener and the KW Symphony office, 56 King St. N., Waterloo.

WATSFIC PRESENTS

Well, last week Watsfic held its elections for this term, and here are the results.
President - Greg Bezoff
Treasurer - Dave Osterman
Secretary - J.A. VanHezewyk
Sec. of War - M.P. Kraatz

Last week also marked the appearance of the inaugural issue of Watsnews, the official Watsfic news organ. That first issue was a virtuoso performance by all concerned, and I only hope that the standard set by it can be maintained.

Also worth mentioning were the excellent presentation on Dungeons and Dragons by Mark Kraatz, and the sizeable turnout (over 30 members). We may have to start looking for a bigger room to hold our meetings in.

That being about all for this week, I leave you with this thought (my own for once): "There is so much that we do not know, that to attempt to define everything in terms of what we do know is a fool's errand."

Greg Bezoff,
President Watsfic.

UPCOMING SYMPOSIUM

On May 10 & 11 of this year, the University of Waterloo will be playing host to the 12th Annual Symposium on the INTERFACE, the first time ever that this symposium will have been held in Canada.

The symposium will feature a talk by David R. Cox, FRS, Professor of Statistics at Imperial College, London, as well as a number of workshops on such fascinating topics as Numerical Consulting, Regression, Graphics, Software Engineering and much much more.

The symposium committee is also calling for contributed papers and authors will be supplied with booth space if needed. Potential authors should submit their name, affiliation, and an abstract of up to 200 words by April 1, 1979 to the Symposium Chairperson. Authors of accepted papers will be required to provide a longer version of their paper for the Proceedings.

Primary accomodation for the Symposium will be in the student residences (!) with a list of hotels provided for those who'd rather stay out of Village.

Other events being sponsored by the Symposium include a tour of UOW's computing facilities, mini-computer labs, and the graphics classroom. As well, for those who are interested, on the evening of May 10, an Oktoberfest evening will be scheduled to introduce visitors to the delights of the KW Oktoberfest.

For further information contact the Symposium Chairperson:

Dr. Jane F. Gentleman Department of Statisics University of Waterloo Waterloo, Ontario, Canada N2L 3G1 Telephone: (519) 885-1211 Ext. 3264

"Terrible news, General—the rebels have seized the military outfitters!"

MATHLETICS

(Must be boring up there, eh)

BASKETBALL

I saw my first Intramural basketball game of the term last week as the MATH B astards took on the Shorties in the PAC. The B level appears to be a very friendly but competitive matchup. The Shorties were a mostly Math group, so it didn't matter who I cheered for.

It was the first game of the term for both teams and their offensive displays weren't exactly overwhelming. The first half ended with Math ahead 13-12. I guess it's easier to put up a good defence than an offence. The B astards gradually lengthened their lead in the second half, in good part due to fast breaks by Doug Davis. Math's offence improved and they sank a few more than in the first half. Final score was MATH B 35 - SHORTIES 27. Roy Dandyk led the team in scoring with nine points. Next game is Thursday February 1 at 9:30pm.

Waterpolo

This Sunday, January 28, the Math Seahorses will be playing Inner-tube Waterpolo against West AB. The game will be at 8:45 in the pool at the PAC. Everyone is welcome to come and play, even if you never have before! So be there, Sunday night, and don't miss out on all of the fun! Just don't forget your swimsuit!

One brief comment on the competitive sports: most of the competitive intramural sports require timekeepers. If teams can't find a person to watch the clock and keep track of the score, penalties, etc. then a player is forced to do it. Anyone who would like to help out one of the teams as a regular timekeeper is invited to attend the games and volunteer. It is definitely an aid to all those involved to have the games run smoothly, and a timekeeper certainly helps.

HOCKEY
TWO FOUR'S to ONE

Both Math teams won their games last week, both by 4-1 scores.

The MATH A team played last Thursday against the Longshots, their favorite opponents. Last winter term the Longshots eliminated Math in the playoffs and won the Intramural Championship, then they beat Math 6-1 in regular play last term, but Math came back to post a 4-3 overtime victory against the Longshots in the final game of the Fall IM Championship. It's not unusual to expect good hockey in the Math-Longshot games, as well as a little non-hockey action, and that held true. The first period featured excellent hockey; both goaltenders were kept busy withend to end play. John Vander Griendt opened the scoring for Math when the game was three minutes old and it was ten minutes later before the Longshots tied the score. The half ended in a tie but it was evident that Math's bench strength was wearing down the Longshots.

Play deteriorated as time elapsed in the second half. Typical of Math's style they avoided penalties but not so for the Longshots, as they were assessed seven consecutive penalties. Scott MacKay took advantage of one of the early power-play opportunities to score on a breakaway and Pete Henschke made it 3-1 just as another penalty expired. Those goals put the pressure on the Longshots and they responded by taking more penalties. John Vander Griendt completed the scoring with his second goal during one of the rare moments both teams were at full strength.

Unfortunately a fighting incident in the last five minutes of the game has resulted in player suspensions to both teams. Intramural rules are aimed at eliminating such unnecessary conduct and their method is to prevent those involved from playing.

The two Arts students playing on the Math team this term deserve mention for their play last week, Peter Bell, who assisted on three goals, and goaltender Jim Stewart, who played his first full game in the Math nets after sharing duties with Rick Kean last term.

The MATH B team played their first game of the term on Monday night and emerged with a 4-1 win over St. Paul's Alumni.

The B team was a little disorganized early in the game and were having trouble with line changes, but soon managed to smooth things out. Bob Valentine and Jim Brown scored in the first half while Math's goalie Frank Giblon was stopping everything coming at him.

Play in the second half was featured by two picture goals, both in favour of our guys. Just over a minute into the second half Harold Tohana set up Jim Brown for a pretty goal to give Math a 3-0 lead. Harold had used his speed on the wing to set up a two on one situation and then passed over for Jim to put it away. John Whitmore capped off an excellent game on the Math defence when he scored on a brilliant rink-long solo rush.

All throughout the game Frank had been making some tremendous saves in the Math nets. (We can't say exactly where he was hiding his horseshoes) His key saves on defensive miscues kept St. Paul's from cutting into Math's lead, and on the basis of the play there's no doubt the score should have been much closer. It was too bad that Frank lost his shutout, especially with only ten seconds left in the game, but St. Paul's never gave up and their hard work resulted in the goal.

All the Intramural hockey games are played at Moses Springer Arena (Lincoln and Weber) and I'm positive the Math teams would be astounded at any vocal support from the seating area. Check the schedule for the Monday and Thursday games, then just drop by the arena.

Perpetual   Motion   Machines

I have been fascinated by the subject of perpetual motion ever since I was at a science fair in public school and one of the older students who we all looked up to as being very knowledgeable in all matters scientific, had produced this marvellous perpetual motion machine. It consisted of a U-shaped wooden track, the right leg of which was higher than the left leg, and there was a sort of trough running from the right leg to the low leg. This wonderful device was operated by the passage of a small marble which was supposed to run down the low side of the U, up the high side and then across the trough back to where it started. Naturally there was ample documentation present which proved to us all that the ball would pick up enough speed running down the one side to make it up the other side and into the trough, and the ball would obviously keep rolling around and around until the contraption burned down or the marble was swallowed by a hamster or some other such calamity. The contraption had only one small disadvantage: it didn't work , but the inventor assured me that this was merely due to 'friction' and that if the machine were to be constructed of steel, this small technicality would easily be overcome, but as the inventor had only been able to build the thing out of wood, he had not yet managed to solve all the world's energy problems. We all went home from the Ryerson Public School Science Fair wondrous at the new-found knowledge that we had obtained, and it seemed only a matter of time before our own machines would be merrily churning out free energy. Wow.

That unfortunate inventor had fallen prey to the common 18th century disease of perpetual motion sickness. Many otherwise intelligent and respected scientists, philosophers and others frittered away most or all of their productive careers producing drawings (but rarely working models) of schemes that would make them instant celebrities. Before I get too much more involved in this tale, let us digress (that's two gresses) and decide just what it is that I am talking about.

What is perpetual motion anyway? A Perpetual Motion machine is merely one that creates energy. This definition can be stretched as it often has, to include machines that operate off some force that you wouldn't ordinarily harness - atmospheric pressure, for instance. Depending on how far you stretch your definition, perpetual motion may or may not be possible.

One of the great stumbling blocks to perpetual motion has always been the second law of thermodynamics. I have always remembered this from the way it was so eloquently set to music by Flanders and Swann, but basically it says that 'heat cannot of itself pass from one body to a hotter body'. Which is fine, except that on incredibly rare occasions all the fast moving molecules in a body might find themselves on one side of it through a coincidence, and that side would then get hotter. As Planck so neatly put it, if you put a kettle on water, there is always a chance that the water will freeze. But enough of chemistry.

Perpetual motion machines generally fall into three categories: overbalanced wheels, things hydraulically driven and a very interesting category of 'others'. By far the most common are the overbalanced wheels, such as the following brilliant design:
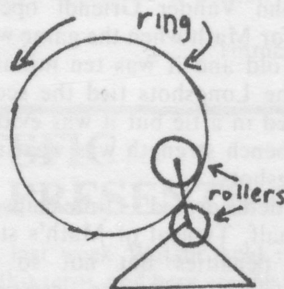

F G. Woodward's design is the simplest you will ever see. He felt that by mounting the wheel in this fashion, it would have to turn counter- clockwise, but then if you think about it, why should it? Here's another brilliant design:
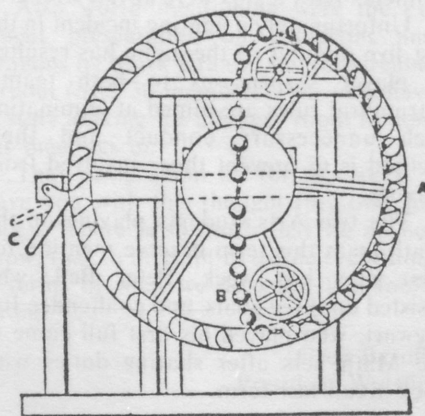

Obviously since all the heavy balls are on the right half of the wheel, it has to turn, (C is a brake to prevent the wheel from rotating too quickly. They needn't have worried.) If you add up all the moments about the origin, you won't get anything.

Many perpetual motion machines in theory would work if you could create frictionless bearings, or in this case, if you could find some sort of gravity suppressing substance that would always cause the left side of the wheel to be heavier than the right:
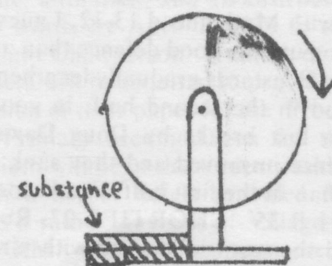
Perhaps one of the more famous water-driven machines is a system whereby a waterwheel drives a pump that pumps water back up above the wheel. Medieval inventors would often set such a device in a stream, and   proclaim that it worked, but this was only because the stream never ran dry and the pump was never actually needed. The following is an excusable attempt:
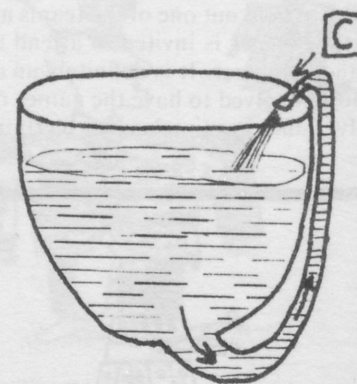
Clearly the great volume of water on the left will overbalance the small amount on the right and all that you'd need to do would be to insert a turbine at C. Bernouilli himself had devised a simple scheme based on two liquids of different densities, and talks himself into beleiving that the water cycle we all learned about in grade three (the means by which rainwater returns to the clouds and so on) is operated by the different densities of salt and fresh water.

Here is a nice combination of the water wheel and the overbalanced wheel. It didn't work either.
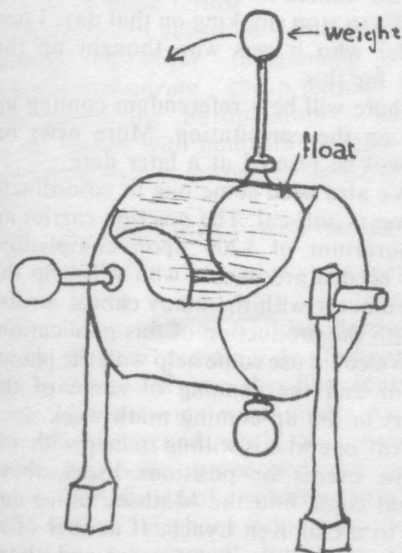
Some inventors actually succeeded, either in constructing working perpetual motion machines or in convincing people that they had. Perpetual motion fraud was very common in Europe and the USA. One Mr. Garabed Giragossian, an Armenian, in 1917 told the United States Congress in somewhat vague terms of a grand scheme to supply the country with free energy. A committee was set up to look into his ideas, and the press and the public were very excited about the whole project - Scientific American was about the only magazine to keep a level head through the proceedings. The Garabed

Committee eventually found that Mr. Giragossian's invention consisted of one (1) flywheel with assorted devices attatched. A small battery-operated motor was intended to get the machine up to speed, but since this usually took a long time, it would be started spinning by miscellaneous strong men in attendance. The motor would then be used to maintain a constant speed. Giragossian had attached a dynamometer of sorts to the rim of the flywheel, and from this he calculated that it took only 0.05 horsepower to keep the wheel spinning at 100' per minute on the rim, and yet it took ten horsepower to stop it. Voila! Free energy! Cooler heads prevailed, the difference between energy and power was pointed out, and all that Giragossian had noticed was that you can develop a great deal of power gradually in small amounts. It turned out that Mr. G was too stupid to defraud anyone, but he easily could have. Americans in the 19th century flocked to exhibitions of elaborate machines which seemed to be running of their own accord, but were really powered by steam from the factory next door and always quit running mysteriously at five minutes to six in the evening.

Let us conclude by examining a successful attempt. Mr. James Cox was a noted London (Eng.) clockmaker in the 18th century. His masterpiece was a clock driven by atmospheric pressure changes off a huge barometer. As the ten gallons or so of mercury went up and down from day to day, they drove the winding mechanism of the clock through a float on the surface. Unfortunately the machine, after running unattended for years, had to be moved and the mercury was disposed of. Today the clock stands, ticked off so to speak, in London's Victoria and Albert Museum, and were it not for the cost of mercury today, it would still be running.

Perpetual Motion may be technically impossible, but many great minds have festered away on the subject, and perhaps their study has contributed to the world, in the form of better bearings and such. I'd be surprised, though.

Steve Hayman

Games and Things

Games and things will (hopefully) be a weekly column appearing in **mathNEWS**. I plan to review at least one game a week and also provide a platform for discussions about game rules, variants, and oth topics. If you keep you eye on this column in the following issues you will find out the answers to such questions as: What is a war game? What is a role playing game? What does D&D stand for? What's a good party game (heh-heh)? and so on. And now...

Blackbox by Parker Brothers is a game for 1 or 2 players who believe in exercising their minds. Basically it is a game of 2-dimensional Hide and Seek wherin one player trys to find out his location in as few guesses as possible using a unique system of deflections and hits as explained in the game. This game is a lot like **Mastermind** in a way, yet it is more challenging.
Rating: 8.5 Price:$10.00 Playing Time: 20 mins.

Racetrack is a good game for two or more players to pass the time in a boring lecture or whatever. Its rules are simple and all you need to play is a pen and a sheet of graph paper. First of all, draw up a race track by making a start and a finish and a track joining them. Each player then picks a starting point (only intersections of lines are legal points) and then one players starts.

To move your "car" draw a straight line to another line intersection representing your car's move to that point. A car may change its x-velocity or its y-velocity by only + or - 1 at a time. If two cars end their turn at the same place then they crash and are out of the game. If a car goes over the outside edge of the track he also crashes. The first car over the finish wins.

There is an optional feature, oil slicks, in which you draw an oil slick on the track. If a car ends a turn on an oil slick then it **must** continue its next turn at the same velocity.
Rating: 7 Price: $.00 Playing time: 15 mins
mpkraatz

"Will You Take the 'Computer Lib' Challenge?"

When Theodor Nelson, author of *Computer Lib*, recently visited Waterloo to speak to a CSC meeting, he left the CSC with a diploma: "The Computer Lib Pledge". The document states some Ted Nelsonish truths, and leaves a space at the bottom for *your* signature.

The text is as follows:

The
Computer Lib Pledge

The purpose of computers is human freedom.

I am going to help make people free through computers.

I will not help the computer priesthood confuse and bully the public.

I will endeavor to explain patiently what computer systems really do. I will try to answer people's questions kindly, or explain that I do not have time. I will not treat any question as a dumb question, since there is no such thing.

I will not give misleading answers to get people off my back, like "Because that's the way computers work" instead of "Because that's the way I designed it."

I will stand firm against the forces of evil. I will speak up against computer systems that are oppresive, insulting, or unkind, and to do the best I can to improve or replace them, if I cannot prevent them being bought or created in the first place. I will fight injustice, complication, and any company that makes things difficult on purpose.

I will do all I can to further human understanding, especially through the new visualizing tools of interactive computer graphics.

I will do what I can to make systems easy to understand, interactive where possible, and fun for the user.

I will try not to make fun of another's favorite computer language, even if it is COBOL or BASIC.

So help me.

Which you will agree, I think (if you attended the talk) sounds just like Ted Nelson.

There are some copies of the Pledge available at the Computer Science Club office. MC 3037.

- R L Biddle

WHO CARES

As our president and internal affairs director are quite busy these days, I thought I would take this opportunity to say a few words on their behalf.

As you have probably heard by now, the greatest problem facing the Math Society is rampant apathy. The society is currently being run by a handful of overworked individuals. This situation will not be helped any by the upcoming February elections which will see the departure of several key executives, with no replacements in sight. Most crippling will be the loss of president Geoff Hains and vice president Ken Lynch. Unless the elections produce replacements for these people, the Math Society will be forced to dissolve.

Before you just shrug this off as an inconsequential bit of trivia, have a look at what it will mean to you. No longer will there be a Mathsoc office to provide such diverse conveniences as staplers, free local phone calls, music in the lounge, information services etc. Gone will be the Social Committee and the Mathletics Department signalling the end of all pubs and athletic events for math students, not to mention Mathweek and the semiformal. The math students would be without representation on such bodies as the Curriculum Committee which must approve any curriculum changes contemplated by the university. The student lockers in the Math and Computer Building would no longer be available. **mathNEWS** would cease to exist, and last but not least, the Math Society Coffee and Donut Stand (C&D) would close up, never to be seen again.

The prevention of all this is a simple matter. All we need is about 20 people (out of over 3000) to drop into Mathsoc (MC 3038) and give us a little of their time. The more of us there are, the less each one of us has to do. See you later.

Greg Bezoff.
Social Director.

Prezz Sezz

We will need many new volunteers to help run the society next term. Most of the people who have been running the society for the past few years are now leaving the university for one reason or another and we will need many people to keep the society going. Watch for the article elsewhere in this issue.

Some out of town news for those who feel a bit home sick. On Wednesday Jan. 17, the town of Huntsville celebrated "WEEDLESS WEDNESDAY". The purpose of this event was to get all those people who wanted to quit smoking (smoking what??) to stop smoking on that day. I just wonder who it was who thought up the name for this.

There will be a referendum coming up soon on the constitution. More news on this will be printed at a later date.

We also need some one to co-ordinate this years anti-cal. The position carries an honourarium of $200 upon completion. Also needed are people who will help the co-ordinator with the many chores involved with the production of this publication.

We could use some help with the planning of and the running of some of the events in the up coming math week.

Any one who is willing to help with any of the events or positions listed above should come into the Mathsoc office and talk to me or Ken Lynch. If neither of us are there just leave your name and phone number and what you wanted to do and we will contact you later.

We have a pick up hockey team that plays every Monday night. These games are geared to those people who can not play hockey very well at all. All you need is a pair of skates and a stick and you too can play in these fun games. All you have to do is show up at the St. Clement's arena at midnight Mondays or come in and talk to me some time.

I would like to thank the editors of Engi-news for printing two of my articles on the front page of their paper.

Geoff Hains
Mathsoc President
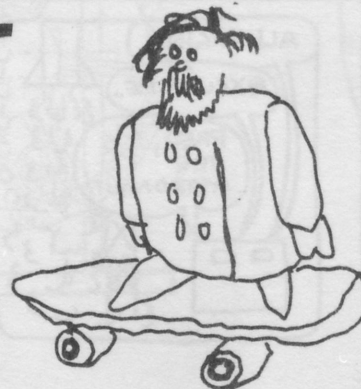
Calculator Fun with Mr. Science

Hello boys and girls and welcome to the workshop of Mr. Science. Today we take a look at electronic calculators. What are they and what can they do? Basically, a calculator is a biceptide multinator, usually constructed out of the modern miracle compound polypentaisobenzate, arrayed with auto stablizing birtopulators and translating bypass introgates. Before we continue, let's have a look at the meaning of some of these terms.

physio-isotherm substrate - framadozzle
biceptide multinator - thingamajig
polypentaisobenzate - cheap plastic
auto stabalizing bitropulators - funny, square bumps with numbers on them
translating bypass introgate - an LED display
LED - see translating bypass introgate

Some of the first calculators ever invented were huge, ugly, loathsome monstrosities such as Charles Babbage's Steam Driven eyesore. As technology marched forward into the 20th century, many advancements were made. As the end of the second world war neared, calculators had approached the point where, with the aid of a soldering iron and 5,000 feet of telephone cable, they could even be programmed! But even these clumsy dinosaurs devoured enough power to light most of New York state and had a mean time between failure shorter than the time it would take for most calculations. They were also very difficult to bring into exams because of the acres of floor space they required.

Modern science however has now made them extremely reliable, requiring no more than 4 batteries to power and small enough to hold in the hand. Their low price makes them a readily available commodity to anyone with triple thick glasses, Brylcreamed hair, flood pants and a huge brief case, should they ever want half a dozen or so to strap onto their belt for decoration.

There are calculators that glow in the dark, some that you read in the sun, some that have clocks in them, some that have alarms, some that can be programmed, some that talk, some that write on paper, some that play games, some that can be worn on the wrist ... the list seems endless! They are powered by NICAD batteries usually but also by solar energy, nuclear fuel cells, little tiny time capsules and atomic fusion. TI's market research has proven that a very popular style would be 'The Natural Mathematician'. Besides the usual number crunching it could also be used as a biofeedback device and be powered on youghurt and crunchy granola bars. Also be on the watch for the new 'Disco-lator'. Instead of the usual LED display it has a miniature strobe and flashing coloured lights. Its thermal power supply works on the combustion of flammable fluids - one Tequila sunrise will provide enough charge for 4 months use.

For freaky sound effects, take any garden variety calculator and hold it by the antenna of an AM radio. If you fiddle enough, around 700 kc you hear a distinctive signal. For real fun, press the keys! Don't be shy - try it with your friends' calculators and have a concert.

For a freaky light show, take your calculator into a dark room and shake it up and down. Notice how all the numbers become farther and farther apart the faster you shake it? That's because the display is multiplexed, i.e. is flashing off and on faster than the eye can see. Shaking it is like looking at it through a shutter. Don't be shy - try it with your friends the next time you're in a dark closet together!

Well, that's enough for today, be sure to tune in next week ... for Mr. Science!

A Question of Relevance

This exam was beginning to look rather dangerous. Why, almost half of the questions bore some relation to the course material. A quick glance around revealed his own consternation mirrored in the faces of the other students. "Fools!", he thought, "Didn't they know what could happen?". He imagined the building in flames, cheerfully converting its occupants into charred skeltons, bits of crisp blackened meat adorning their sardonic death's head visages. It must be some sort of cruelly sadistic joke. But the risk!!

He fingered his wooden leg, ruminating on what lay within, hoping he wouldn't have to use it today, like he had to back in '74 during that Stats exam. They should've known better, better than to condemn over 300 of them to a fiery grave.

They rebuilt the place of course, and the horror of it all had faded to little more than a few half believed stories, but he knew what had happened. Knew it for a fact. Damn it, he had started it! Not that he would have done it any differently, given the chance. After all, the code was the code.

Awakening from his reverie, he was staggered by the mounting tension in the room. A furtive look at the clock told him there were but five minutes left until the end of the exam. Surely they could hold off for five lousy minutes. Nonetheless, he began examining the path to the nearby exit. The exit was always nearby, he had learned to make sure of that long ago.

People were beginning to get restless now, there were even a few scattered conspiratorial conferences on a topic all too well known to him. Sweat beaded his forehead, and his body was wracked with nervous tremors as he sat out the second longest five minutes of his life.

As everyone stumped out, the staccato clattering of their legs ringing in his ears, he looked back at the building he had just left, still standing, and wondered, for how long this time?
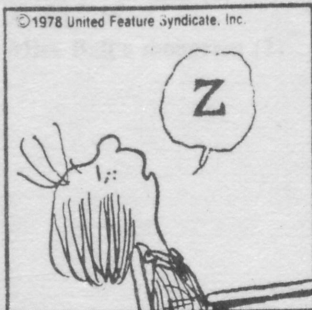
BAKKER'S DOZEN

Formerly the Merely Mediocre Trivia Test.

This column, unlike MMTT, intends to use mostly "REAL" trivia as opposed to "on-campus" trivia. Now without further ado....

1. Which team has lost the Superbowl the most times?
2. What was the name of Gene Autry's horse?
3. True or False. Rats will not drink alcohol.
4. What was the name of Roy Rogers' dog?
5. What does the lowest ranked "poker" hand contain?
6. Who was the last Toronto Maple Leaf to win the Calder Trophy for NHL Rookie of the Year? a)Britt Selby b)Kent Douglas c)Brian Conacher d)Jim McKenny e)Mike Walton
7. Who first won the Conn Smythe Trophy? a)J.C.Tremblay b)Dave Keon c)Roger Crozier d)Bobby Hull e)Jean Beliveau
8. Who was the clown who ran against David Crombie in the Toronto mayoralty race?
9. In what year did the NFL merge with the AFL? a)1965 b)1967 c)1971 d)1966 e)1970
10. Which member of "Queen" wrote "You're My Best Friend"?
11. Who did Philadelphia beat in the 1975 Stanley Cup? a)Boston b)Montreal c)New York d)Buffalo e)Colorado
12. How many American teams won the Stanley Cup between 1960 and 1969?

BONUS ON-CAMPUS QUESTION

13. How many filing cabinets does Mathsoc have? a)2 b)10 c)5 d)4 e)6

A rare beast
(Tues night)

Federaction

I thank the editors of the regular **mathNEWS** for allowing me to impart my views to you. The opinions in this column are those of the author and do not represent the views of **mathNEWS**, MathSoc, or the Federation of Students.

Once again Fed election time is upon us. Next Wednesday (the first day of FASS), the new Fed president will be elected. Two weeks later council elections will be held. I find it bothersome that those elections are so close together, yet not at the same time. I would prefer that they were at the same time to save money, or a month or more in between to serve as a rest period for those involved in both campaigns. I would also like to see an elected (instead of appointed) Vice-President, and a Board of Directors composed of all thirty council members (instead of the present five-person body). However my past attempts at bylaw reform have failed and I guess it is now up to someone else to try anew.

Personally my involvement with this election is less than in the past. I have formally retired from politics, and I do not expect to be affiliated with this university (and perhaps this city) much longer. Nonetheless I find this election interesting.

The election is interesting for these reasons. First of all there are no clear cut "heroes" or "villains" as in past elections. Secondly for the first time in four or five years The Chevron or the AIA do not seem to be an issue. It is also interesting that many candidates have surfaced from the ranks of the unknown.

Having looked over the four candidates it seems to me that Mark McGuire is the best man of the four. This is not to say that McGuire and I have always agreed on every issue, nor am I saying that the other candidates are incompetent or that they don't have good ideas. Basically, the story is that I have seen what McGuire has done, but I am totally unaware of what the others have done. Mark McGuire has been involved with the Federation during the past two years as co-op Environmental Studies rep, and is currently the vice-president. I was impressed by his work and at a time when the Federation is getting it together after the two and a half year long Chevron incident, I believe that the continuity that McGuire would provide would help the Federation.

Whoever you support in this election, please vote. Unlike referenda, presidential elections have generated low turnouts in the past two years. It would be good to see a high turnout. Let's hope that the turnout of November 30th was no fluke.

jjlong

Mental Menu

Soup
1. The capital of Portugal
2. An imitation reptile

Fish
3. The largest part of Sambo's foot
4. For express puposes
5. A foul's resting place

Game
6. On the head
7. A break in the mountain ridge

Vegetables
8. To measure time
9. What made Boston famous
10. Spring colour

Relish
11. A cold sauce
12. Comical performances
13. Soldiers assembled

Meats
14. An English Author
15. Woman's best weapon
16. One of Noah's sons

Desserts
17. A little of everything
18. Evidences of winter

Fruits
19. December 25 and January 1
20. Water in motion
21. Two of a kind

Beverages
22. What pugilists do
23. A golfer's aid

Dave Newell offers a prize for the most completely (or first completely) correct solution. The prize is dinner in a local restaurant.

Place for your own doodle
(Done during Stat 231)

This is another gridword, this time symmetrical, by David Welbourn. I have changed a few of the clues myself. Last week's has had a phenomenal response, with 27 entries already. The week before had one entry, the winner, M.Proulx. Submissions and solutions can be put in the grey box on the third floor which says **mathNEWS** on it. Comments and suggestions can be sent to mathnews or ajamlton on the 'bun, too.

Across

1a Dorothy's Auntie (2)
1i Melts in mouth (2)
1n Foot (2)
2a Beat one's better (4)
2f Composition (5)
2l Not to be put before horse (4)
3b What Spock has in common with sports (3)
3g Cathy has a little pet (3)
3l Beer (3)
4b Island State (6)
4i Bilbo or Frodo (6)
5d Johnson in Laugh-In (4)
5i IM either crazy or at the beginning of the clue (4)
6a Correlative conjunction (2)
6d Our little general abbreviated (4)
6i In learning to make money (4)
6n Sol-fah leading note (2)
7a D & D traits (7,8)
8b Minor lieutenant (2)
8g Consume in meat (3)
8m Half an em (2)
9b Well-known trilogy (4,2,3,5)
10a Shortly nearby (2)
10d Wheel Cap + Ten Cents - BME (4)
10i MGM feline (4)
10h Oh-oh (2)
11d Vulcan symbol (4)
11i Was Latin (4)
12b They put at the end of opponent (6)
12i Earthling (6)
13b Rhoda knows a little greek (3)
13g Water from rice (3)
13l Spanish shout (3)
14a Making it a little darker (4)
14f A solo E is not held tight (5)
14l To cry out would be a little yellow (4)
15a Mickey's initials (2)
15f Article (2)
15n Miss Ball's mongram (2)
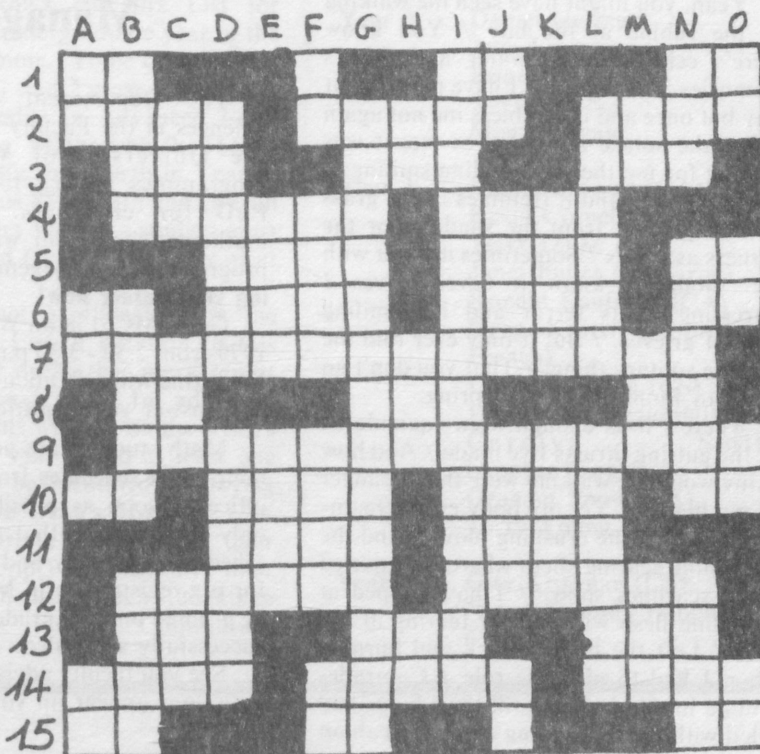
Down

a1 Web without you you (2)
a6 Of root-beer fame (2)
a14 Dungeon master (2)
b1 To entwine (4)
b6 Foolish (5)
b12 Neatly with proper (4)
c2 Water source (3)
c7 WATMAP store (3)
c12 Resistance unit (3)
d2 To ward off a direction (6)
d9 Baby rhinoceroi (6)
e4 Jason's boat (4)
e9 Ranch type (4)
f1 Not amused (2)
f4 Emit an object backwards (4)
f9 Norse war god (4)
f14 Madrigal syllable (2)
g2 Watsfic interest (7,7)
h2 South America (2)
h7 There's a hat in what? (3)
h13 Company (2)
i1 Mathletics participants (6,8)
j1 Belonging to me (2)
j4 The Tentmaker (4)
j9 Irish Republic (4)
j14 And in French and Latin (2)
k4 Half a vitamin deficiency (4)
k9 Noise provided by large cat (4)
l2 Uncle Tom has more than one? (6)
l9 Where the Greeks won a war (2,4)
m2 Cassius Clay (3)
m7 Male game counters (3)
m12 Drink in whales (3)
n1 Worry (4)
n6 Dance containing orange juice (5)
n12 Dudley Do-right's sweetie (4)
o1 Tanganyika Territory (2)
o14 Pound (2)

BAKKER'S DOZEN ANSWERS

1.   The Minnesota Vikings have lost 4.
2.   Champion.
3.   True. It must be mixed with their food.
4.   Bullet.
5.   A hand containing the 2.3.4.5.7 of different suits.
6.   b)Kent Douglas.
7.   e)Jean Beliveau in 1965.
8.   Rosie Sunshine.
9.   e)1970
10.   John Deacon.
11.   d)Buffalo Sabres.
12.   Only Chicago in the 60-61 season.
13.   c)5

That's all for this week. Any comments can be sent to me care of **mathNEWS**.

jr bakker

Yeah, you might have seen me walking
by the rubble at the bay / You know
there's echos on the water and there's
memories in the spray / I have passed that
way but once and it will bless me not again
/ But the solace never leaves me, it was
waiting for me then. / Swelling smiling in
the mountains and it trembles in the grass
/ Calling quiet from the shadows or the
corners as I pass / Sometimes it is not with
me, though I know it never leaves /
Caressing in its terror and it's smiling
when it grieves. / But it only ever told me
but one solitary thing: / That you don't go
down to Bainsville in the spring.

There's lives enough been squandered
by the gutting thrusts I've made / And how
many would be walking were they stranger
to my blade? / Yet my body ever screams
for it has felt the crushing blow / And the
wrenching searing slices where the gnarled
white scarlines show. / I have ripped at
wriggling flesh with hunger tearing at my
soul / Left the bodies black and burning
when I had to play the role / Comrades
flailing in the darkness till their lungs had
filled with mud. / Falling on me and about
me, splashing with me in my blood. / Bare-
knuckled I have bludgeoned till I could not
feel the sting / But I don't go down to
Bainsville in the spring.

I do not fear my passing or the petty
threats of death / But I will not yield my
living while I yet can fight for breath / For
I feel the world about me and I will not let
it go / And I will not be denied it while I
yet can land a blow / So I do the things I
have to do to hear the ocean sing / And I
don't go down to Bainsville in the spring

ADS

Anti-Cal

Apt. to Share

Tutor wanted!

To Manage or Be Managed?

The Department of Management
Sciences in the Faculty of Engineering at
the University of Waterloo offers
programmes leading to the MaSC and
PhD for engineers, scientists, and
mathematicians who want to plan their
progression to management. **Start manag-
ing your career now!**

Go to MC5158 on Wednesday, Jan 31,
1979 from 2:30 - 3:30 p.m. Professor Mike
Magazine will talk about their careers and
will answer your questions.

Math students are advised to **pick up**
their **latest schedules** from the Registrar's
office as soon as possible. They are the
only confirmation that courses have been
scheduled correctly and must be retained
for pre-registration in March. Grades will
be granted only for grades which have been
successfully scheduled.

See you faculty advisor if any errors or
omissions appear on your schedule.

Mathnews Editor trying
to Figure out how to
Fill page ten.

Ah the gentle art offilling in blank spaces with the masthead
This also serves to mention all those vital things that didn
t get mentioned elsewhere.

Doug McInroy tells me that the 27th at 1:30 pm at the PAC
the University of Waterloo Warriors take on the Guelph Gry-
phons. CBC is providing national coverage of the game. The a
thletic department and the Xxxixxx Warriors invite allspect-
ators to bring banners to the game (so that they're seen on
TV, dummy!) Please take careful note of the time, which was'
announced wrong. Or rather, CBC changed our xxxx minds for us.
We did okay timewise tonight -- were finished at ten to elev
en, which is a good three hours before I expected to finish.
WE had a lot of helpers and writers for this issue; in addit-
ion to the writers whousually type their own articles, dthed-
monds and sahayman typed some miscellaneous stuff. The list
of writers this week comprises kekropp, gvbezoff, rmmcmullan,
mpkraatz, rlbiddle, gmhains, pckelly, jrbakker, jjlong, drn ew
ell, dwswelbourn, Phil Kelly and Berb Meed did the photonning.
layout (that means taping down the typeset stuff) was done
variously by phil, walter, geoff, rlbiddle, and me, your
crazy editor ajmalton.
So -- we finally managed a ten-page issue, after worries that
it might come out to being canceled due to lack of material.
If anyone has anything to submit then please submit it before
Tuesday afternoon if you can; •
it makes things so much easier.
You might even type it into the
'bun..The last thing that I was
going to say was to suggest that
you go to see FASS, which will
be as good as claimed.