



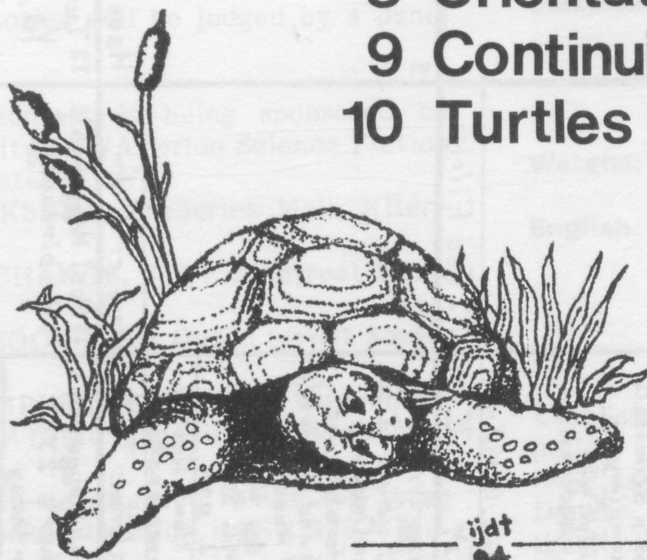
VOL.34, NO. 3
Friday, FEB 17, 1984

math NEWS

DICK BEDDOES'

TOP TEN

- 1 **TURTLEMANIA!**
- 2 **Meet the Turtles**
- 3 **the meta Contest**
- 4 **Turtle 61 Revisited**
- 5 **Orientation '85**
- 6 **New Gold Turtle**
- 7 **M.G.B.**
- 8 **Orientation 84**
- 9 **Continuity**
- 10 **Turtles Without Hats**



Are you a Turtle?

Friday	Saturday	Sunday	Monday	Tuesday	Wednesday	Thursday
17 February Fed Flicks ::	18 OUA A Men's Swimming & Diving Championship in Ottawa GALLIPOLI	19 :: Fed Flicks	20 The Best of Cannes 8pm Humanities Heritage Day	21	22 Cinema Gratis: The World According to Garp	23 Oh, I Love Turtles!
24 Women's Volleyball Finals Women's Indoor Track at Toronto Fed Flicks ::	25 Canadian Classics 2 pm Humanities OUA A Men's Volleyball Championship Men's Basketball Championship - mathNEWS deadline Normani, is that you? PSY II	26 The Turtles of Wrath :: Fed Flicks	27	28 The Getting of Wisdom (International Film Series) 8pm Humanities	29 Pascal Lectures 8pm Humanities Faith, Reason, and Freedom Orientation '84 meeting 4:30	30 February 1 March Pascal Lectures 8pm Humanities Faith, Reason, and Freedom
2 mathNEWS v34#4 Men's OUA A Indoor Track and Field Championship at Windsor Fed Flicks ::	3 Wing-Ding Party at A.K.S. - Second Ontario Conference of Youth and Students (Good Fun! Hosted by the AIA) MC 3004 2 pm OUA A Men's Hockey Championship Monty Python's The Meaning of Life	4 :: Fed Flicks	5 Have a Day ☹️	6 Shore Tuesday	7 Ash Wednesday	8
9 UB40 at Skate Seven Fed Flicks ::	10 Paul Heyganth's brother's 23rd birthday mathNEWS deadline Space, the final frontier STAR TREK IV II	11 Paul Heyganth's 14 birthday :: Fed Flicks	12 Turtles, Turtles Ya, Ya, Ya!	13	14 Cinema Gratis: Elephant Man	15 mathNEWS v34#5 tomorrow!
Fed Flicks ::					Cinema Gratis: Diva	Two more Shopping Days to Wine & Cheese

Watsfic Story Contest

Again, Dangerous Submissions

One: The stories for this contest must have a Science Fiction or Fantasy theme.

Two: Length should not exceed 3000 words.

Three The stories should be typed. Each page should be numbered. Contestant's name, address and phone number must appear on a covering page separate from the story. If you do not have access to a typewriter or a computer, it may be possible to arrange some computer time for you to type up your final draft. Contact 743-9485 for details.

Four: Submissions can be made to:

- a) WATSFIC, M&C 3036, University of Waterloo, Waterloo, Ontario N2L 3G1.
- b) A SMALL BOOKSHOP, Frederick Street Mall, Kitchener, Ontario.
- c) if none of the above are possible, phone 743-9485 and make arrangements.

Five: Deadline for submissions is Wednesday, February 29, 1984.

Six: Prizes will be awarded to the top three submissions. The prize structure is \$50/\$25/\$15.

Seven: The stories will be judged by a panel of three people.

Eight: This contest is being sponsored by WATSFIC (University of WATERloo Science Fiction Club) with the assistance of:

- a) A SMALL BOOKSHOP, Frederick Mall, Kitchener.
- b) K-W BOOK EXCHANGE, 308 King Street West, Kitchener
- c) NOW & THEN BOOKS, 103 Queen Street South, Kitchener
- d) STARDUST COMPUTER SERVICES, Kitchener
- e) STARSONGS, WATSFIC'S fanzine publication.

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Are You a Turtle? (part 2)

One should never reply to this question with profanity. After all we have certain standards to maintain. However, this question is being asked with increasing frequency. With this in mind I saluted forth, bravely, to ask the campus, "are you a Turtle?".

Real Mathie: I'm sorry, but I only talk creatures above engineers on the evolutionary scale.

Psych: Have you wondered why you feel compelled to ask perfect strangers this question?

Engineer: No! I'm an Engineer! (singing) "We are, We are, We are the Engineers! We can, We can,...".

Frosh!: No! I'm a frosh!

Fed President: I feel that the successful tender for Federation Hall in no way affected the voting. (possibly misquoted)

Chevron: I'm not a capitalistic lackey of the imperialist war mongering fascists!

Classical Studies: Is this the face that launched a thousand ships and burnt the towers of Ilium or is it a turtle? (Paraphrased)

Watsfic: Me? I'm a magic user.

English: To be or not to be! That is the question. Whether 'tis nobler in the mind to suffer the slings and arrows of outrageous fortune or be a turtle?

Ernie

Apologies

Last issue under Elections some names were misspelled. This was done purposely. I apologize and here are the correct spellings (maybe): Corinne Duncan, Wayne Dawe and Rick Buzzelli. While on the topic of Watsfic, they have a new Vice President. Her name is Marion Cunningham so go in and say hello.

Math Grad Ball

Plans for the Math Grad Ball '84, a formal event celebrating the end of educational hell, are well underway. The MGB will be held on Saturday, March 24th at the Transsylvania Club, with live music provided by Toronto Harbour (courtesy of the Dean). Tickets will go on sale later in February, with prices still to be determined. The numbers will be limited, so keep your eyes open for notices of dates.

MathSoc Report

Well, I've been elected to MathSoc now, and am supposed to be representing you there. At the same time, I ought to report to you on the events of our last meeting (Tuesday, February 7).

First, most of the newly elected class representatives have been ratified, which means that we have the right to vote on council. This is not really all that unexpected, of course, since council would need a damn good reason to not ratify a rep who was elected by his constituents.

Most of the major positions were filled. Kelly Masterson is in charge of External Affairs, Brett Martin of Internal Affairs, Kevin Malseed (Lucky) of Publicity, Steve Lightstone (CAPS) is Social Director, Ross Morissey is temporarily Speaker, and I am Secretary (almost General Secretary of the MathSoc Politburo, but not quite).

Anne Kristensen reported that this term's students do not seem to realize that the C&D Lounge is a No-Smoking area, but that smoking is permitted in the other lounge (the smoking lounge). We ask all smokers to respect the rights of non-smokers, and to refrain from smoking in the C&D Lounge.

Anne also reported that the MathSoc office, which has traditionally kept a collection of old midterm and final exams, is running low on these. We would like to ask anybody who has copies of old exams to donate them to MathSoc. MathSoc will also be asking profs to contribute exams.

After some suggestions from our social director, it was decided that this term's Wine and Cheese would be held on Saturday, March 17. A CFNY Road Show was approved for Thursday, March 29. MathSoc will have a Video Night on some weekday between now and the Wine and Cheese, but no exact date was set, so you will have to watch for the writing on the wall. Ross and Tim Hill will look into having a party at Ross' place (the Kent Hotel) with sponsorship from a beer company to reduce the cost. Not to be outdone, our Vice-President announced a party at her place on March 3. All other proposed social events were abandoned.

Lisa Seabrooke will present a budget for the Wine and Cheese at our next meeting. Lida Cepuch is handling the purchase of MathSoc Rugger Shirts, and a T-shirt competition is likely in the near future.

The meeting then adjourned, leaving me wondering, on my way to dinner, about the strange

attitude that my fellow elected councillors took toward the constitution which you overwhelmingly supported last year in the referendum. Power is ultimately derived from the people, and a constitution which is supported by the people should be absolutely binding on their elected representatives. Yet my fellow councillors treat the constitution as if it were merely a list of suggestions to be perused by them in their leisure time. A matter came up (It doesn't matter what it was. It was resolved constitutionally in the end.) where the council nearly passed a motion that blatantly defied the constitution, and the motion was stopped only because a spectator happened to complain.

During the course of the ensuing debate, it was stated that Council would never accomplish anything if it were caught up in hour-long arguments over minor technicalities. The constitution is there to be consulted in the case of an emergency only, not for the regular proceedings of Council. But I feel that the constitution ought to be used to prevent such emergencies from happening in the first place. If the constitution is ignored until an emergency should arise, it will be found that the emergency in question should never have arisen, and can no longer be resolved through the constitution. Arguing that Council knows what is best for the math students and does not require a constitution sounds very much like the policies of Moscow.

Unconstitutional matters should not be suggested at all. This would prevent useless debates, just as well as ignoring the constitution does. If an unconstitutional suggestion is made, and I admit that nobody is right all the time, it should be corrected by the others present at the meeting. There is no point voting on a motion which is itself unconstitutional. If Council insists that they cannot and will not be bound by the constitution, they should hold a referendum on the issue. If the majority of the students in MathSoc agree that MathSoc's constitution should not be binding, than this can be added as an amendment to the constitution, and I will accept the decision, otherwise, I will continue to feel as I do.

(Some of you might feel that a law which declares itself to not be binding poses a paradox. Not so. A line reading "This article is intended only as a guideline, not as binding law.", or something fairly similar, has been included in previous books (with the result that these books were treated as divine law, for those of you who remember the original D&D) without causing any confusion. There is no reason to suppose that it would cause any problems in MathSoc.)

Cary Timar

Little Mac Attack!

A first review!

The Macintosh, introduced by Apple Computer in January, has been receiving a large amount of publicity. However, to the best of our knowledge, this **mathNEWS** review is the the first one (we do not count previews).

Icons Galore!

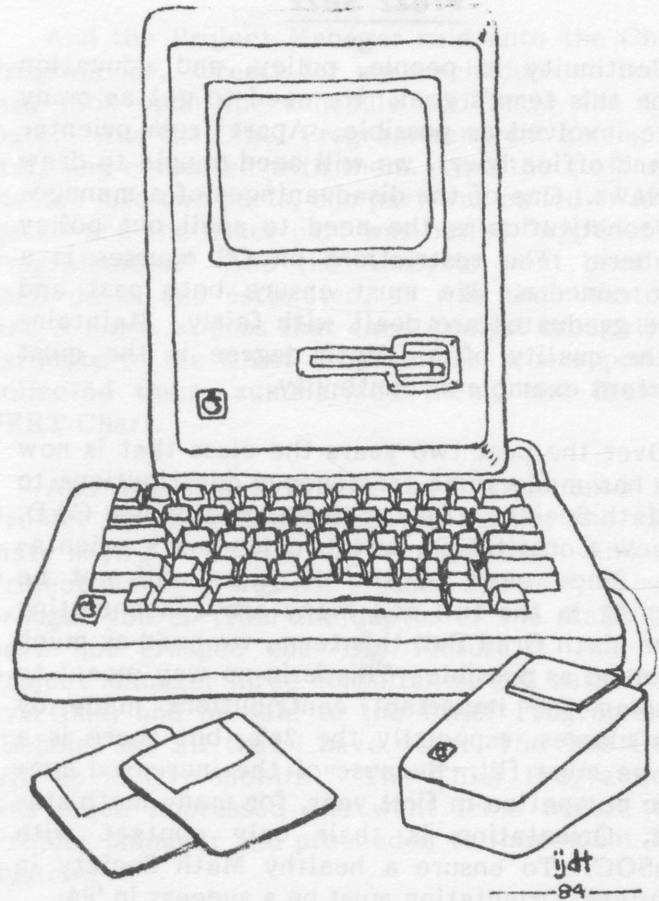
The Mac makes extensive use of symbolic pictures of the objects in the computer, called "icons" by Apple. Using a mouse the user is able to manipulate these symbols, moving, selecting and deleting them. This results, according to Apple, in a reduction of time required to learn the use of the system, from 40 hours to less than an hour.

The machine is able to draw quite detailed symbols on the screen, thanks to its 512 by 342 graphics resolution. It currently uses a black-on-white screen, but a colour monitor will be available in the future. The screen handling is **very** fast. Thanks to a package called QuickDraw. This program, residing in ROM, took Apple four (count 'em!) man-years to develop, and is written in a highly optimized assembler code.

Advanced Hardware

The Mac is based on the Motorola 68000 16-bit microprocessor (The IBM PC's is really an 8-bit), which handles all the screen control as well. It runs at 60% higher clock speed than the Lisa (which was selling for \$14 000 last year), and is thus easily able to run much more complex software much faster than the IBM PC.

The Mac comes with 128K of memory, which is currently not expandable. Next year, however, Apple will be offering a 512K version (as soon as 256K memory chips become available). There are expansion slots, and thus no 8088 (read: IBM PC emulator) processor card can be plugged in. However, the Mac does have so-called 'virtual slots', operating through a very high speed serial port, allowing daisy-chaining of peripherals. The disk drive is a 3.5 inch microfloppy drive, manufactured by Sony, and storing 400K of data. These disks are currently a bit scarce, but with Apple's endorsement they are destined to become an industry standard. A second disk drive will be offered in the next few months, and double sided drives (with 800K) are expected to be available within a year.



An interesting note: The Mac contains less than 50 integrated circuits, much less than IBM's display board alone. This enhances both reliability as well as compactness and so portability. The Mac weighs in at about 10 kilos.

Not Cheap but...

The Mac sells for \$ 3600 in Canada, but it can currently be bought in Toronto for \$ 3200, including two software packages, MacWrite and MacPaint. This is less than a comparably configured IBM PC sells for, and still within reach of a reasonably frugal co-op student...

The \$ 14 000 Lisa is no more; Apple has replaced it with Lisa 2, which now sells for between \$ 5000 and \$ 8500. The Lisa 2 can also run Mac software.

Are You a Turtle?

Punk came and went. (Mika laulaen tulee, se viheltaen menee. -ed.) The New Romantic look gelled, and then faded. Preppies are scorned by everybody except the polyester crowd. But, Turtles are here to stay. Yes, fellow primates, that oldest living of reptiles has manifested itself in the form of a craze more popular that statistics ever was. So don't be left out of the mud, become a Turtle.

Prezz Sezz

Continuity in people, policy, and education will be this term's goal. We need to get as many people involved as possible. Apart from orientation and office hours, we will need people to draw up bylaws. One of the disadvantages of a manageable constitution is the need to spell out policy elsewhere. The restrictions on CS courses is a major concern. We must ensure both past and future graduates are dealt with fairly. Maintaining the quality of a BMath degree is the most important example of continuity.

Over the past two years the class that is now in 4b has made some tremendous contributions to the Math Society. Among these are the new C&D, the new Constitution, and two landmark orientations. Since most of the 4b class will not be returning in the fall and many are concentrating on the Math Grad Ball this term, we need as much new blood as possible. This is in no way meant to downplay the important contributions made by other classes, especially the 2a's, but there is a void we must fill. Because of the increased academic competition in first year, for many math students, Orientation is their only contact with MathSOC. To ensure a healthy Math Society in the future, Orientation must be a success in '84.

The elections this term provided a good example of the need for concrete policies. The chief returning officer had to make a decision each time a question of legality came up. The election results were then approved based on his decisions. Not only is this a poor use of the CRO's time, the decisions are not carried over to subsequent elections. By writing down policies for elections and approving them we can save a great deal of time and confusion in the future. This also applies to policies of Math Society Clubs (the CSC), Ventures (the C&D), and Publications (MathNEWS). The roles of External and Internal Affairs director, as well as Secretary and office manager need better definition. These policies must be formalized, and passed as bylaws, to be ratified at the general meeting in October. The more people involved in this process the better.

In the past two years the enrolment restrictions for CS courses have caused the most concern to Math Students. These restrictions are necessary to help maintain the quality of the program, but they must be applied fairly. The reason for the strong feelings on this issue are the economic benefits of a CS degree. Decisions affecting the careers of so many students must be uniform and objective. There have been problems in the past and we must work with the faculty to ensure fairness in the future. We must uphold the reputation of the School without establishing a new one of changing rules mid-game.

If you would like to get involved with the Math Society, or would like to make input into any issue, get in touch with your class Rep, the Executive, or drop into the MathSOC office (MC3038). If the office is closed, and you are between classes, you might consider signing up for an office hour; the pay is unbelievable!!

Ross Morrissey

Mathematics Corner

by not Fraser Simpson

Most of us remember back to Grade 7, when our Math teacher told us about variables. "You can use a letter instead of a number, and it can stand for any number." was what these teachers said. But can it stand for any number? Could, for instance, the letter 'i' stand for π ?

To most of us, the idea of 'i' standing for anything other than the imaginary unit, or perhaps a natural number, goes very much against the grain; having 'x' take the value π would seem perfectly normal. Clearly, we have some preconceived notions about the possible values of a variable, given only the letter being used to represent it.

What are these ideas? Well, let us consider various letters. We would normally use 'i' or 'j' for elements of \mathbf{N} , whereas p, q, or r normally stand for rationals, reals, or primes. s or t are normally parameters, but u and v are dependent functions which you normally only use to integrate by substitution. Capitals normally represent matrices, which seems to be a useful convention, except that C is the constant of integration, and R is the radius of a circle or sphere. The identity element in a monoid (or a group, field, ring, ...) is normally written e, but the identity matrix is not E, as might make sense, but I.

An other point of interest is the rareness with which we use some letters. Have you ever seen a χ used other than in the χ^2 distribution? And have you ever used \aleph other than as \aleph_0 or \aleph_1 ?

When I started this article, I had a long list of examples of incongruities in variable use but as I observe that you are already dozing off, I will not bother you further; however there are further incongruities in the uses of combinations of variables which I would like to annoy you with.

As an example, take cx . Everyone will agree that cx means "c multiplied by x", but not so dx , or x . Perhaps, then we should use parentheses more often, as in $c(x+y)$. But then we run into $f(x+y)$, which is a function of x , and even $\sin(x+y)$, which is not "s times i times n times quantity x plus y" nor "s times the square root of negative one times n of quantity x plus y", but a three-letter pre-defined function.

Speaking of functions, have you ever noticed that functions of natural arguments are treated differently from any other functions. If $x \in S$, then a function with domain S will be written $f(S)$. If, however, we have $i \in \mathbf{N}$, then a function with natural domain will be written f_i instead. And D_x or D_y is the derivative functional with respect to x or y , while D_i is the derivative with respect, not to i , but to x_i .

I also ought to comment about powers of functions and inverse functions, about powers of functions and derivatives of functions, and take arms against a sea of troubles, and by opposing end them. To die, to sleep. No, I guess I'll have to wait till my work term to sleep. I would like to apologize, dear readers, for I am very sorry, but I seem to be straying irreversibly off topic, and I'm...

Genesis, Release 2.5, Chapter One

IN THE BEGINNING the Project Manager created the Programming Staff. The Programming Staff was without form and struture. And the Project Manager said, "Let there be Organization;" and there was Organization. And the Project Manager saw the Organization was good; and the Project Manager separated the workers from the supervisors, and he called the supervisors - "Management," and he called the workers - "Exempt."

And the Project Manager said, "Let there be a mission in the midst of the Organization, and let it separate the workers, one from another." And the Project Manager created the mission and he called it - "The System." And the Project Manager separated those who were to benefit from The System from those who were to build it. And he called the former - "Users," and he called the latter - "Programmers."

And the Project Manager said, "Let all the Programmers in the Organization be gathered together into one place, and let a Chief Programmer be brought up to lead them." And it was so. And the Project Manager saw that he was competent.

And the Project Manager said unto the Chief Programmer, "Create for me a schedule, so that I may look upon the schedule and know the Due Date." And the Chief Programmer went among his staff and consulted with them. And the staff was divided into two parts, one part was called - "Analysts," and the other part was called "Application Programmers." And the Analysts went back to their desks and estimated, as was their custom. And it came to pass that each Analyst brought his estimate to the Chief Programmer, whereupon he collected them, summarized them, and drew a PERT Chart.

And the Chief Programmer went unto the Project Manager and Presented to him the estimate saying, "It shall take ten months." And the Project Manager was not pleased and said, "I have brought you up from the depths of the staff; you have not grasped the 'Big Picture.'" And the Project Manager hired consultants, and authorized overtime, and he said to the Chief Programmer, "Behold, see all that I have done! The Due Date will be in five months." The Chief Programmer was much impressed and went from before the Project Manager and proceeded to implement The System.

(to be continued...)

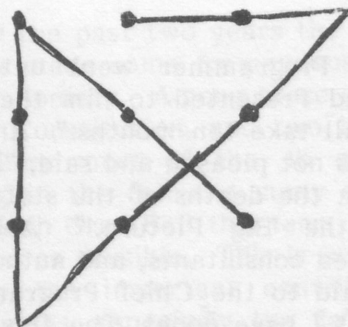
Michael Coleman
(from Datamation, 11/73)

**Order your
mathshirts
today!**

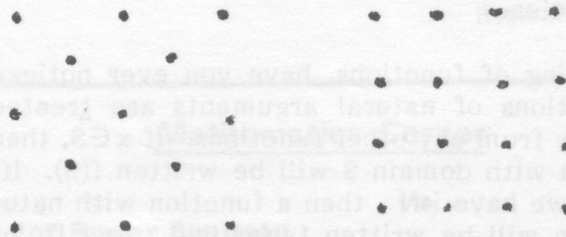
Here I am once again (will it never end???) trying to get an end to a production night. It's almost 1 am but no end in sight yet... The amazing thing is that there are still six (that's 6 ^) people still here - - exceeding the normal by about four. Tonight's production crew consisted of Ernie (looking over my shoulder, layout, pasteup), Ross Morrissey (the Prezz (proofreading, eating pizza)), Cary Timar (prod. mgr., layout, confusion, typing), Tom Ivey (layout, pasteup, FAST typing), Scooter! (layout, taping), Mark (eating pizza), John Tauro (cover, Mac pic), Tom Watts (- me (typing, layout)) Articles by Marcel (entertainment), Ross (prezz), MathSoc (asst.), Alfred (math column), wRoss (2nd deg Burns), Vainamoinen (tape), Scooter! (calendar), Tom Ivey (George, riddles), Ernie (watstuff, turtle-2), Fraser (xword, not mathcolumn), Richard Cleve (puzzle), Cary (mathsoc, chevmath), Watts (mac, wheels) 'Whew' and I guess I should get credit for the masthead too... Hopefully this will be the first of our articles to be printed on Unix since Xerox is shut down for the night, but with our luck we won't get troff working.

Some Variations of an Old Puzzle

Most of you are probably aware of the puzzle when one is given a three by three grid of points and asked to draw a continuous curve consisting of the fewest possible number of straight line segments that passes through every point exactly once (the curve may cross itself but not on a grid point). The grid, along with a solution curve consisting of four line segments, is given below.



One can easily obtain a variation of this puzzle by changing the grid of points. I present the two following variations.



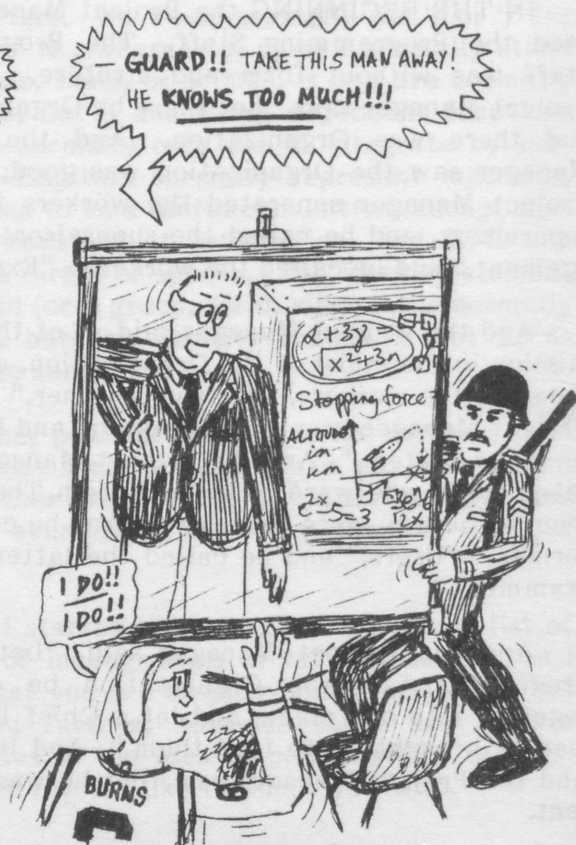
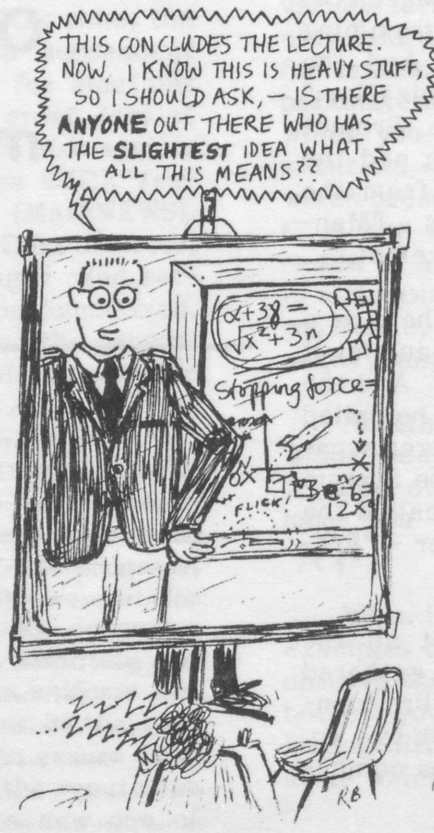
The one on the left can be done with five line segments and the one on the right can be done with six line segments. Remember that the curve cannot pass over a grid point more than once. Solutions will be given in the next issue.

Richard Cleve

SECOND - DEGREE - BURNS



TIME PASSES . . .



feedback

From watrose!jmsellens Fri Feb 10 11:43:32 1984
 To: watdesu!mathnews
 Subject: Tax Editorial by Tom Watts in V34 #2

Well, Tom, there is a way to convince Revenue Canada that they don't really need ALL of your money. Contrary to popular belief, the people at RevCan are not all insensitive, unhelpful people just dying to get their hands further into your pockets.

All you have to do is write a letter to RevCan describing your situation, give them about a month, and a letter will magically appear in your employer's mailbox, telling him/her/it to stop picking on you and to not take too much money away. It helps if you have an understanding of what things are income and what things are deductible. These are the things that you need to tell the nice people down at RevCan:

- Your full name.
- Your Social Insurance Number.
- Your address, and a phone number where you can be reached during the day, in case they need more information.
- Your employer's name and address.
- Describe your situation: i.e. I will be working for n months/weeks this year since I am a co-op student, I expect to earn \$xxx/month/week plus overtime/vacation pay/bonuses/etc. I am single/married and my deductions will be approximately:...
- Don't forget tuition AND the education deduction (\$50 per month you're in university full-time). Don't forget to tell them about any interest and/or scholarship income that you may have.
- It may be helpful to refer to last year's tax return (of course you kept your duplicate copy, didn't you?) to help ensure that you haven't forgotten anything.

General advice:

- Don't leave it until the last moment. I would suggest doing it as close as possible to the start of your last work term for the year. This is because you must allow time for your request to work it's way through the system and you want the result to get to your employer before he/she/it has already deducted too much from you (it's harder to get it back once you've paid).
- If anything, I would recommend over-estimating your income and under-estimating your deductions. You don't want to end up owing them in

April and if you do, they might get mad and decide, that since you lied to them, that they'll never be nice to you again.

- Be polite. You are asking these people to do you a favour.
- Don't try to hide things. Describe your situation clearly.

This strategy has worked for me in two different taxation years. Address your request to the Source Deductions Section of your nearest District Taxation Office. Look in the phone book or on the back of last year's tax guide. Toronto is 36 Adelaide St. East, Kitchener is 166 Frederick St. DTO's are also in Hamilton, London, Sudbury, and several other places in Ontario. Now, how to get permanent change? Well, this may be impossible, due to the administrative complexities, but you could try writing to Revenue Minister Pierre Busieres in Ottawa. Again, be polite - he's been under a lot of pressure lately. This is an attempt at the filter down approach.

John M Sellens

Dear mathNEWS

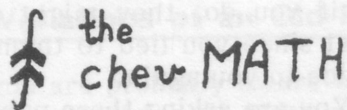
As a reply to your editorial of Friday Feb 3/84, re Revenue Canada, TD1 and taxation of co-op students, I propose the following.

First let them say I am in C.A. Co-op and so have access to certain knowledge not available to other non-C.A.'s.

With respect to working a single workterm in a year the solution is simple. Where deductions are below gross income expected, simply add a deduction for R.R.S.P. contributions. I admit this is not technically legal but it is obviously fair. All one is doing is assuring that the balance at the end of the year is as close to nil as possible, where nil is the expected amount.

Now with respect to a dual work term it is a little more difficult. Since some tax is definitely due for the year one cannot simply bump up the deductions to pay nil tax, even if this was possible since there are limits on allowable R.R.S.P. deductions. But if nothing is done the hard-working (and generally poor) student is still shafted of his/her money. To compensate for this all I can suggest is including some R.R.S.P. amount to increase the net claim code, so as to reduce the amount paid. It is also possible, depending on your moral standards and marital status to claim that you are **getting** married in the year and thus claim the spousal deduction, increase your claim code and drastically reduce taxes.

(found in the mathNEWS mailbox)



The chevMATH: A paper defending the basic integrals of the Mathies.

We condemn the disgusting capitalist imperialist operating systems ubiquitous on this campus and otherwise perpetuated by the monopolistic capitalist bourgeois administration of the university. These systems are all designed by IBM, the company which has a disgusting monopoly on the software market, or by the lackeys of IBM, such as DEC, Bell Labs, or BSD. The president of this university, a lackey of the exploiting capitalists, attempts to dupe the proletarian masses by forcing them to use these systems.

To prove our point, we observe that all of these operating systems feature accounting, which is clearly capitalistic (especially if it is management accounting). These accounting systems give more capitalist money to the privileged bourgeois users than they do to the oppressed working class students.

As an alternative, we at the chevMATH have designed a truly equal operating system for the proletariat.

This system, which we have named ChevROS in honour of the great democratic liberator of the oppressed masses of that name, who incidentally was the father of modern socialist computer science (1921). This system is approved by the Criminal Perversions Committee on Male Lesbianism (CPC-ML), and by its local representative, the Artificial Insemination Association. Please to use only the most correct of the English on the system, comrade, and remember the system is the equal of you. Address your requests as to an equal, therefore, and do not expect like a capitalist that the system will be your proletarian slave.

An important feature of ChevROS is the proletarian machine code which it is based in. We introduce the first truly revolutionary assembler ever developed. Although some few of the old established instructions have been retained, most of the decadent reactionary ones have been discarded. Also, we introduce for the first time several new instructions. One of these is the XOP instruction, which causes the system to execute the operator currently at the bottom of the stack. The exact details of this are a trade secret which we would not wish the Western imperialists to learn, but this does depend in part upon the relative party standings of the terminal operator and the host system operator who is privileged to

work from the Red Room. Another factor affecting the outcome of this instruction is the type of keyboard currently in use by the operator in question. Virtual Communist 303 terminals use electrified keyboards, whereas the more sophisticated VC404's employ nuclear CRT's.

At the system level, the most widely used command is the "purge", which compares the party standings of the user and his best enemies; however, other instructions are also frequently useful, such as the "Please to list file, comrade." request. Charges in ChevROS are only incurred by those who wish to log off the system. These expenses will be large; moreover, logging out will require a personal password, and will only be permitted to users who are Jewish, or who have come to the attention of Amnesty International.

ChevROS will, naturally, support ChevROL, the new language recently developed in Albania for feeding chickens. This language has all the essential features of a working class computer language. For example, no longer does the programmer need to test whether a variable is equal — for all variables are clearly equal — but he can now determine which of two variables is more equal. Although it is not possible to declare an integer constant in ChevROL, it is possible to declare your parents to be lackeys of the warmongering capitalist imperialist decadent bourgeoisie. It is also possible to declare a line to be counter-revolutionary, and to accuse one of your comrades, a fellow student (whose contributions to the party are inferior to your own) of having written it. This is normally followed by a use of the "GO TO" command, as in "GO TO SIBERIA!".

A few things the stout socialist user must remember, due to boycotts imposed upon us by the imperialist capitalist of the West (Edmonton), resources do not always exist to serve the immediate requests of the users, so they must be prepared on occasion to wait in queues for the rationed goods that do become available.

WATSFIC AD&D Format Tournament

March 3-4

6 player teams
 \$4.00 per person cost
 \$3.50 Watsfic or Fed. member
 \$3.00 Both Watsfic and Fed. member

Prizes donated by: Now And Then Books and What's This (the complete Games Store)

Information available at Watsfic MC3036 (right next to mathNEWS)

Curious George

Imagine you are at a large public meeting. The speaker is denouncing the undying enemy of the state, parading all the atrocities just reported from the front. In mid-sentence, the speaker changes enemies. The enemy is now another superstate which had until this moment been our ally. What was the enemy (it seems) only a moment ago is now our ally and always has been. Does this seem unreal and theatrical to you? It shouldn't, because it is something we do every day without asking why. It is concisely termed **doublethink**.

Doublethink is "the power of holding two contradictory beliefs in one's mind simultaneously, and accepting both of them." The world of 'Nineteen Eighty-Four', which is what this column is about, runs on doublethink. The Ministry of Love, Ministry of Peace, Ministry of Truth, and Ministry of Plenty (in Newspeak Miniluv, Minipax, Minitrue, and Miniplenty) are dedicated to the continuance of cruelty, war, lies (propaganda), and poverty. In Orwellia you must use doublethink in order to believe and practice the Party's policies and at the same time fear for your life in a violent and miserable world.

Doublethink is a very convenient trick of the mind. At first, people like us (particularly students) can't conceive of holding two contradictory beliefs because we think logically all the time. What 'Nineteen Eighty-Four' reveals is how slim a hold logic has on the mind. In the face of pain and fear, Winston Smith takes that final leap into the realm of doublethink. At the end of the book his mind is left a dry husk, happily waiting for the bullet.

Of course, Winston was a hard case, and for most of us doublethink is a comfortable way of getting along with others. We often have to swallow ideas and opinions, a large set of which are wrongheaded, and learn them by **believing** in them. We do not rebel against things we believe are false because we also believe they are true and we cannot rebel against our own beliefs. Doublethink is also handy for dealing with rapid change. When history catches up with us (like when Andropov died) we adjust by believing that the new state of affairs is as it has always been, meanwhile also believing that the world is in constant upheaval. We live in a world of doublethink just as much as the denizens of 'Nineteen Eighty-Four.'

* * *

At this point the reader (you) may pause and think all this 1984 business is rather contrived. If all these connections existed with 'Nineteen Eighty-

Four', why weren't we talking about them four years ago? Why does anyone bother to draw parallels with a well-written but out-of-date novel about socialism?

The changes that more or less put 1984 into effect were not present four years ago. We may think, comfortably, that they have always been around, but we are just using doublethink again. More important, it's time that we, students and new members of society, stood back and reviewed the life we lead instead of accelerating it. Then we see mold, the shape of things to come, that our world is conforming to.

Tom Ivey

Personals (Impersonals)

Tired of Math? Apply now for transfer to a parallel universe where mathematics has been declared illegal and simple arithmetic is permitted only between consenting adults. Ask for Cal in MC 3032.

Telepathy Club meeting next week. Time and place to be perceived.

Hamburger Helper - I'll bring the BUN and you bring the meat! - G.G.

All math is three lines to ME.

Joel - Have a Smurf-muffin on me. - Angie

Join the BPA - You too can kick that loathsome three-balloon-a-day habit. Just call our hotline 885-1211 or come to the next Balloon Peelers Anonymous meeting.

Happy Valentine's Day, Nancy. Let's celebrate when it's all over.

The Anti-Integration Alliance meets every Wednesday behind the PAC for tea and sympathy.

Watch out for latenight snowballs in V2!

Help stamp out and abolish redundancy! The Anti-Redundancy Coalition Against Redundancy meets and gets together every Monday night at the beginning of the week.

Carol Channing is a Turtle. Are you?

Tired of Ice and Snow? Eligible mature students can now transfer to an alternate world where marzipan and cotton candy fall from the sky. Ask for Victor in MC 3035.

Happy Valentines Day, Mark Duf. Also, Happy V-Day to Ler and his faithful sidekick Richie.

-Love Kristin

Tape Tangles

This week's column will cover tape transport mechanisms (very important in a Walkman-type unit), and how to pick one that will stand up to the required use.

What's a Capstan?

The capstan is a thin, polished, steel shaft, located at the bottom right of the cassette well, right above the big rubber wheel (which is the pinch roller). When you play a tape on your deck, the pinch roller presses the tape against the rotating capstan.

So what? Well, the capstan is what actually moves the tape; the reels only spin fast enough to take up any slack. This means that the capstan is responsible for maintaining even tape speed, and slippage will be easily audible. Some decks are available with specially treated capstans for better grip, while many high-end home decks feature dual capstans for even tape pressure and smooth transport.

Direct or Disc

There are several direct-drive home tape decks on the market. In these, the capstan is a direct extension of the motor shaft. This technique does improve the specifications somewhat, but is likely inaudible to all but the most golden-eared audiophiles. Disc drive is featured in one of Sony's Walkman models, and is somewhere between direct and belt drives in stability. In a portable model, additional stability is usually a major bonus, so you might wish to check this out.

Two (or more) motors are featured on many home cassette decks. In this case, separate motors are usually provided for the capstan and for the reels. Since the reel motor must also be capable of high-speed winding, using a separate motor for the capstan allows it to be optimized for its primary function, providing both enhanced sound and reliability.

Speed Stability

There are two aspects to (tape) speed stability: maintaining (1) constant speed and (2) correct speed. The first of these is usually accomplished by the use of a flywheel. The flywheel, rotating at the speed of the motor, has mass, and therefore inertia. The more inertia it has, the more resistant it will be to tape speed changes. These changes are a problem mainly in the headphone units, and home units have no need to worry about these. The best way to test the stability is to vigorously shake the Walkman-type unit (don't try this

with a home deck! -ed.) and to listen for instability. If you can't hear it, it will be unlikely to bother you in real-life use. One disadvantage of the larger flywheel is that it will increase the size of a small portable unit. This is why some of Sony's smallest Walkman models are not quite as stable as their larger (and less expensive) siblings. Sometimes bigger is better!

The correct speed (as well as resistance to change) can be accomplished by the use of a servo lock. This compares the rotational frequency to an internal standard (usually a quartz crystal), correcting any abnormalities as they occur. The result is a tape deck with very close to 100% speed accuracy. This feature is available in at least one headphone unit (Sony WM-D6) and quite a few mid-to high-priced home decks.

Next Issue: What's in a tape?

Vainamoinen

the metaCONTEST:

- rule 1: anyone in math can enter.**
- rule 2: you can enter anything.**
- rule 3: you can win anything.**

Clarification of the rules:

We would like your ideas for a new t-shirt/button logo. They can be departmental, or math designs. We couldn't think of any prizes, so we'd like you to think of some worthwhile prize somewhere between a trip for two to Rio, and a complete set of math pins. The winners of the design contest will win a winning prize, and the winners of the prize contest will win a t-shirt with the winning logo on it when they come in. We were going to ask you to choose the judges, but we ran into a problem deciding who would judge it. Be creative, the deadline is Friday February 24th.

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Editor-in Chief: Tom Haapanen
(once again, he probably denies it)

Cryptic Crossword

by Fraser Simpson

Solve this crossword as you would any other cryptic crossword. Solutions should be submitted to **mathNEWS** no later than February 26th, 1984. Prize: Math 83/84 T-Shirt. Winner will be announced in the next issue. Last week's winner: David Cohen. Pick up your prize in the MathSoc office.

$dy/dx = 0$

1. Sent cane, perhaps, and water-flasks. (8)
5. Almost frighten with a disfiguring mask. (4)
9. Descent of a vital liquid. (5)
10. Show contempt for a monarch from a place in the theatre. (7)
11. Secret sort of foe, clad in tin. (12)
13. Shortened rhyme includes the slightly shortened repetition of accent. (6)
14. Clothe in a waistcoat. (6)
17. Killing is some person's great mirth. (12)
20. Vital organ I crushed, partly. (7)
21. They make a hard comparison. (5)
22. Puts away different teas. (4)
23. Notes officers' dining room will take a long time to complete.(8)

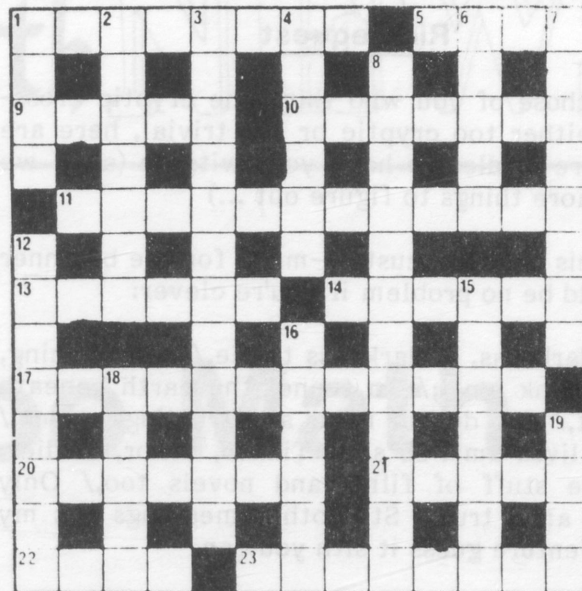
$dx/dy = 0$

1. A young bear to note it has six faces. (4)
2. Only ego could bring about a new doctrine. (7)
3. Where all change to get the last of the merchandise. (3,2,3,4)
4. Not anybody can be a murder detective's dilemma. (6)
6. A Mexican dish that's served hot or cold, we hear. (5)
7. Eat gruel sloppily, but manage. (8)
8. Making friendly contact, bringing together the workers. (7,5)
12. Herb makes tedious conversation about the border. (8)
15. Smoothing out before nightfall. (7)
16. Strength of a sea creature, by the sound of it. (6)
18. Strange thing that follows 15. (5)
19. Is repeatedly found in Egyptian mythology. (4)

Answers to last issue's crossword:

Across: 1. Hopping 5. Issue 8. Lamenting 9. Ace
10. Sash 12. Breathed 14. Status 15. Jested 17. Pollster 18. Zinc 21. Hug 22. Toadstool 24. Cited
25. Elation

Down: 1. Holes 2. Pam 3. Inns 4. Goitre 5. Ingrates 6. Spaghetti 7. Emended 11. Starlight
13. Pulsated 14. Sapphic 16. Sesame 19. Colon
20. Asia 23. Obi



Math Society Council Winter 1984

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Riddlequest

For those of you who think the cryptic crossword is either too cryptic or too trivial, here are some more riddles to hone your wits on (as if we needed more things to figure out ...)

1. This riddle is custom-made for the beginner and should be no problem if you're clever:

Born in darkness, in darkness to die,/ A dark thing,
a small think am I;/ To tunnel the earth beneath
your feet,/ And devour roots and grublings sweet!/
In other lives am I so sly:/ Tinker, tailor, soldier,
spy;/ The stuff of films and novels too,/ Only
unknown am I true./ Still other meanings has my
name:/ Venture guess it sith you can.

2. This is a charming literary riddle from Elizabethan England (spelling modernized to make it readable):

First I was small, and round like a pearl;/ Then
long and slender, as brave as an earl;/ Since, like a
hermit, I lived in a call,/ And now, like a rogue, in
the wide world I dwell.

3. Here a couple of common objects (but perhaps not this time of the year) seen in the usual strikingly different context, as riddles:

Up, I am a rolling river;/ Down, a scent-and-colour
giver.

Two brothers we are, great burdens we bear,/ By
which we are bitterly pressed;/ In truth we may
say, we are full all day/ But empty when we go to
rest.

4. Although riddles may seem like an English-language tradition, they are a common denominator of many cultures. There are a wealth of riddles to be found in German, Arabic, Russian, Chinese, Italian and Swahili, to name a few. The trouble is that they lose a lot in translation, especially if they use puns or wordplay in general. This Finnish riddle, for example, sounded much better in Suomic:

I creep forth from a small corner;/ I wasn't given a
voice and yet I talk./ When the tongue is quiet,
then I take its place;/ What goes on in the heart, I
can then express.

5. To close, once more we refer back to the Codex Exoniensis, the only riddle-book extant from pre-Norman Conquest England. Of the less smutty riddles in the book, this is a gem that has an easy solution (when you consider where the Exeter Book was found):

I stretch beyond the bounds of the world / I'm

smaller than a worm, outstrip the sun,/ I shine
more brightly than the moon. The swelling seas,/
the fair face of the earth and all the green fields,/
are within my clasp. I cover the depths, / And
plunge beneath hell; I ascend above heaven,/ high-
land of renown; I reach beyond the / boundaries of
the land of blessed angels./ I fill far and wide all
the corners of the earth / and the ocean streams -
say what my name is.

Answers to last issue's riddles: 1. lead, in a
pencil; a goose-quill pen 2. the letter 'h'; dodeca-
hedron 3. writing a letter 4. whale, in Latin
"orca" 5. a key

Hot Wheels

Transportation on a Budget

The subject of our review in this issue is the 1974 Ford Galaxie 500.

This car (or boat, one may argue) is quite widely available, with practically all specimens with a student budget. The car is most frequently available in green, with four doors, 3-speed automatic and a 350 cid engine.

Galaxie 500 can not be accurately described as a driver's car; some specimens, however, could be passenger's cars (and yes, the driver may also be classified as a passenger). The engine provides large gobs of torque at command, but this is soon greedily sucked up by the huge 2-tonne bulk of the car. There is sufficient horsepower to squeal the tires from traffic lights beside an unsuspecting Porsche, but this is mainly accomplished by having low-cost, low-traction bias-ply tires on the car. As a result, the cornering forces are rather low, in the .400 range. Actually, this becomes quite useful since any forces higher than this would throw the driver out of his position on the flat bench seat.

We were unable to obtain an objective handling figure, as the car did not fit between adjacent pylons on our handling course. However, we can say the good foresight is a definite asset in driving this car, as the steering takes several seconds to respond to a movement of the steering wheel. The brakes are, we admit, power-assisted, but this was the only one of their virtues we were able to find.

The body is quite rust-resistant, but wer suspect this is mainly because of the sheer quantity of metal in the body panels. Vinyl roof (also in green) is a standard option.

Price: \$20 to \$500, depending on the extent of cancer.