## math NIMNS

## JULR DOMTISSIOY:

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[^0]The article belon is a reprint from mathNEWS, Volume 3, Number 5. (October 26, 1973). It is not intended to represent our current opinions.

## $(\text { CHEVRON })^{-1}$ ?

We at mathIIFWS feel that an issue has afore-mentionned october 5 th Chevron back arisen on this campus which warrants com- page, the engsoc article reads in part: ment. We refer to the apparent arowing "The backpage take-off of the Roard of attemint to "get the Chevron".

The happening which initiated this uproar vas the recent Campus Centre nktoberfest venture. "nw, as we all know Campus Centre shut-down and nktoberfestrelated happenings and said so in mo uneven terms. Me at math":EVS aro $100 \%$ in sunport of the chevron's right to take such a stand on this controversial issuo. This does not necessarily mean that mat!'iEWS supports that stand but right to make it
fathsnc first qot into the act on Tuesday, nctober 3. yhen at its council meeting (ineld in the pub at the nktoberfest event, incidently) nassed a motinn which read"the council condemn the Chevron for nroduction of the last page of the lectoher 5 issue as being misleading and unnthical." At the the same mecting, mathsnc also agreed that "a petition made un hy Enmsoc will be nlaced by the Coffon and jonut stand so neonle can either approve or disapprove of the Chevrons recent concial minutes of tic above-mentionned meeting.

Fnjsoc made its nosition quite clear on the front page of the recont nctoher issue of Enginews in an editorial uritten by the engsoc oresident. ?eferrinn th the

The backpage take-offest advertisement Entertainment's oktoberfest adveron was in the nct. 5 th issue of the chevron of not only in bad taste, unrenresentative an people's attitudes to nktoberfest and an attack on chance to run the without giving them a chance chevron's event first, but also showed the chevron's singular-minded paper, renresentin? only those who run it and not giving a damn about student reaction." KOU REALLY, UE ask you in all fairness, फov could such a behind the Federation's nktoberfest event arguments which clearly supported its stand. The societies' reactions? 'lathsoc condemins the chevron, and engsoc, apnarently in all seriousness, suggests closinn Chevron down and firing all closing the Chevron down and firm
 least.

## but there

just the same,
the mind phrase "in in altan in, of all places, Enginems, and apparently in a serious vein? Have you thumhed through an issue of Enginews lately? In bad taste? issue of Eng, mathsoc and engsoc were clearly The Chevron was clearly of the opposite view. The Chevron reacted with satire and
in any event, we anain want to make $i t$
clear tiat we do not necessarily endorse words echo die lost in darkness the Chevron's stand but we do endorse the Chevron's right to make tiat stand.
pulses
castaways we are in skull-caves
bone-cages and groping in the dark
hearing the drip grip damp in the dark groping to ind the other i
colours for the blind
music for the deaf
In the darkness 1 have felt your mind in my blindness just a touch soft
what light from yonder cave now breaks
it is a mirror will $0^{\prime}$ wisp
and i am you are me

##  Ever WAnT to sヨe IT ative Agazn

## Book of Math

In the beginning God created the heaven and the earth. Now the earth was unformed and void and darkness was apon the face of the deep; and the spirit of god hovered over the face of the waters. And God saw the earth, that it was not well-defined. And God said : "Let there be definitions." and there were definitions. And God sam the definitions that they were good. And there was conclusion and there was premise, one day.

And the Lord said : "Let there be principles." and there were principles. And the Lord sam the principles, that they were good. And there was conclusion and there was premise, the second day.

And the Lord said : "Let the earth bring forth axions, that there shall be wherewith to prove." and there sprang forth axioms and postulates in great multitudes. And the Lord divided the axioms into those of the truth and those of unspeakable falsehood. And the Lord looked upon the axions, and saw they were good. And there was conclusion and there was premise, the third day.

And the Lord said : "Let the earth bring forth lemmas, the lemmas of the field theory, and those of the group theory, and the lemmas that inhabit the geometries, each after its kind." and there were lemmas. And the Lord saw the lemmas, and He proved them, every one after its kind. Valid and invalid proved $H$ e them. And the Lord looked upon the lemmas $H$ e had proven, that they were good. And there was conclusion and there was premise, the fourth day.

And the Lord created the theorems and $H 0$ did prove them. And there was conclusion and there was premise, the fifth day. Granted all this proving required several additional 50 -hour hacking sessions, but due to Einstein's Theory of Special Relativity, and time dilation, this was all accomplished in a single day.

And on the sixth day the Lord booted the system. And He coded a program to reside within it, even after His own iange coded He it. And he named this program Man. And the Lord saw every thing that He had made, and, behold, it was very good. And there was conclusion and there was premise, the sixth day.

And the heaven and the earth were finished and all the host of them. And on the seventh day the Lord finished his work which He had made; and He rested on the seventh day from all his work.

These are the generations of the haven and of the earth when they were created, in the day that the Lord made earth and heaven. And the Lord planted a garden eastward, in Euclid; and there He placed the man whom He had coded. And the Lord commanded the man saying : "Of every theorem in the garden thou mayest freely prove; but of the tree of the axioms of good and evil, thou shalt not negate of it; for in the day that thou negatest thereof thou shalt surely be disproved.

And God said : "It is not good that the man should be alone; I will code him a help meet fr him." And the Lord caused a halt to be generated upon the man, and his execution was halted; and He took one of his subroutines, and he closed up the place with comments instead thereof. And the subroutine, which the Lord had taken from the man, made he a woman, and brought her unto the man. And the man named her Eve, saying something in a language wich I cannot accurately translate.

Now the Engineer was more subtle than any lemma of the field theory which the Lord had proven. And he said unto the woman : "Come with me, and I shall reveal unto thee my Tool, which be more immense and ridgid than any that is in Euclid."

But the woman was not interested in the Engineer's tool. Therefore did the Engineer attempt a different approach. Said he : "Wherefore shalt thou prove all the proois that are in Euclid, and thou attemptest not the negation of the Fifth Postulate?"

And the Engineer did convince the woman, that she did negate the Fifth Postulate, that was of the Tree of Axions that was in Euclid. And the Lord did see that which the Engineer had done. And the Lord spoke unto the Engineer, saying : "Because thou hast done this thing, cursed art thou from amongst all humans, and from among all the axioms of the field theory; no brains shalt thou have and stupidities shalt thou speak all the days of thy life. And I will put enmity between thee and the woman, and between thy seed and her seed, they shall bruise thy head, and thou shalt speak obscenities to bruise thoir ear."

And the Lord spoke unto the man and unto the woman, saying : "Wherefore dost thou negate my Postulate which I have given thee? Therefore the Lord sent them forth from the garden of Euclid to program the computers whence they were taken. So He drove out the man; and he placed at the east of the garden of Euclid the principles, and the undecidable proposition which turned every way to keep the way to the Tree of Axioms.

And the man knew Eve his wife, and she conceived and bore Cain. And again she bore his brother Abel. And Abel was a prover of theorems, but Cain was wild, and he pursued the beasts of the land; even the sheep and the femeng did he pursue for his deviant puposes. But Abel, his brother was much beloved of the Lord.

Now Abel did behold one day, Martha, and he determined that she should be his wife. And the Engineer did come unto Abel, in disguise, giving as his name, Sauron. And Abel did welcome the stranger, and take him in, and feed him.

Now Sauron did speak unto Abel, and told him of rings,, and how these could be used for engagement and for marriage. And Abel spoke, saying : "I must forge me such a ring."

Therefore did Abel, aided by Sauron, forge the One Ring. And this was the Abelian Ring. And Abel did present the Ring unto Martha, saying : "If thou wouldst be my wife, take thou then this ring that I have forged." Then did Martha wish very much to be wife to Abel, and therefore would have taken from him the Ring, but for that now did the Abelian Ring show forth its power, which was the Power of Commutativity, and as Abel gave't unto Martha perforce must she so return the Ring unto him. And this was the curse of the Ring, that while he lived, its bearer could not be rid of it.

And Abel, with his genius, did eventually marry Martha anyway, and he knew Martha, and she did conceive, and bore him Matt, that was the father of all mathies. But before he could know Martha again, his brother cain saw that his brother was more beloved of the Lord than he himself and he rose up against his brother one day in the field theory, and did overcome him, and slew him.

And the Lord sam what Cain had done, and He spoke unto him, saying : "Where is thy brother Abel?" And Cain said: "How the Hell should I know? An I my brother's babysitter? Can't he take care of himself?"

And the Lord spoke unto Cain, saying : "Thou hast slain thy brother. But thou art not criminally culpable, being homicidially insane. Therefore must thou spend a week in a psychiatric institute, albeit thou mayest be granted parole after two days for good, or at least passable behaviour. However, for this heinous deed, thy seed shall henceforth know only sheep."

And Cain went forth from before the face of the Lord. And Cain begat Chemmie, and Syssie, and Mechie, and Civvie. And Cain lived nany years after he begat Civvie, and begat sons.

The remainder of this history may be found elsewhere.]

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# Kistorante Review 

Well, here is the last restaurant reviem of the term. I have tried to rate many of the local restaurants subjectively, but naturally the ratings are relative.

Ali Baba (uptown Waterloo on King Street) Price : H

Rating : 4
Not as classy a restaurant as it thinks it is, but not too bad, either.

Angie's Kitchen (Waterloo Square)
Price : L
Rating : 2.5
A pleasant place to have breakfast. The waitresses are usually very friendly.

Aphorisus (King Street north of Waterloo Square)
Price: ML
Rating : 3
Reasonable.
Bensen's (near Kitchener bus depot)
Price : H Rating : 5
One of the most expensive restaurants around, this one really is classy.

Bert's Cellar (near Kitchener bus depot)
Price : L
Rating : 4
A different place, with unusual but good dishes.
The Brittany (again near bus depot)
Price: H
Rating : 5
Perhaps the best restaurant in the twin cities. The food is excellent, and the service phenomenal. An excellent selection of desserts.

Cafe Mozart (Queen St. near King)
Price :
Rating : 5
The place to go for desserts, but very little else is available. That is why I can't say how much a meal costs. The desserts are good, however.

Cafe Royale (King St. east of downtown Kitchener)
Price : MH Rating : 3.5
The rating here would be $H$ and 4.5 if the portions were just a little bit larger. This restaurant could rank with Bensen's, The Brittany, and Pierre's.

Casa Rugantino (on Belmont, east of Union.)
Price: L Rating : 4
Good Italian food for comparatively low prices.
Cedars of Lebanon (downtown Kitchener on King St.)
Price : $M$ Rating : (3)
I didn't try enough here to be able to give a definite opinion, but the cuisine is Middle Eastern and vegetarian if you are interested in trying it yourself.

Chaggares (downtown Kitchener on King St.)
Price : L Rating : 1
Not very exciting.
Chances $R$ (second plaza past $n-d j i n n-e a r r i n g s)$
Price : M Rating : 2
Charlie's (downtown Kitchener on Charles St.)
Price : M Rating : 2
A reasonable attempt at an Italian restaurant.
China Kitchen (just north of Waterloo Square)
Price : M Rating : 4
Real Chinese people eat here in such numbers that it must be quite authentic. It certeinly tastes good.

Corkscrem (near VIA station on King St.)
Price : H Rating : 2
Expensive dinners, but not really worth the cost. If you insist on spending a lot, there are many better places.

Crock and Block (far east on King St.)
Price : H Rating : 2
I wasn't much impressed by this spot either.
Duke of Wellington (Waterloo Square)
Price : MH Rating : 2.5
An airy atmosphere. Perfect for lunch on a sunny day.
Godfather's (first plaza past $n$-djinn-aarrings)
Price : ML Rating : 2.5
I don't think a description is necessary.
Golf's (on Lancaster near Conestoga Pkwy.)
Price : MH Rating : 4.5
One of the best in town. I can't explain how to get to it, but if you find it, you can eat a hearty meal. An 18 ounce steak is offered here. On cold winter days, the roaring fire is also nice.

Grandma Lee's (several locations)
Price : * Rating : 2.5
For snacks like muffins and cookies. They also serve a mediocre breakfast.

Henry's (Highland near Westmount)
Price : M Rating : 4
A nice place with good meals, good service, and good desserts.

Houligan's (King St. north of Columbia)
Price : M Rating : 3.5
Of roughly the same caliber as MeGinnis landing, but with a wider selection.

Ivy's (uptown Waterloo on King St.)
Price : M Rating : 3
eopentideently closed. I don't know whether they will be

Kelsey's Roadhouse (Highland at Belmont)
Price : M
Rating : 3.5
A good restaurant in the medium price range. The service is normally friendly and the cooking is good, but this seems to be getting worse.

King Kong Submarine (second plaza past $n$-djinn-earrings) Price : L Rating : 2.5

Another one you're all familiar with.
Lantern (uptown Waterloo on King St.)
Price : ML
Rating : 3
An inexpensive and fast restaurant serving American Chinese food. Not very special, but edible.

Lulu's Dine and Dance (Weber south of University Ave.) Price : M Rating : (3.5)

The first time I was here, we all had excellent meals, huge portions, and the entertainment was great. The second time, the portions were considerably smaller, the steak was burnt, and the group was terrible. Try at own risk.

Mandarin Duck (King St. north of Columbia)
Price : MH Rating : 3.5
Most people seen to know this plece, so I won't bother to describe it.

Marbles (uptown Waterloo just off King St.)
Price : ML
The specialty here is hamburgers of all types. These are mostly quite good.
MeGinnis Landing (first plaza past n-djinn-earrings)
Price: $M$ Rating : 3
You must have been here before.
The Metro (Victoria St. south of VIA Station)
Price : L Rating : 3
Many varieties of schnitzel are served here, and on weekdays a special offers a full meals for surprisingly low prices.
Mother's (uptown Waterloo and elsewhere)
Price : Rating : 2.5
The same here as anywhere.
Mr. Submarine (uptown Waterloo on King St.)
Price : L
Rating : 1
As above.
New Orleans Pizza (several locations)
Rice : KL Rating : 0
Not worth trying.
Old English Parlour (uptown Waterloo on King St.)
Price : $M$ Rating : 2
The meals here are acceptable, but I was not overly impressed by the place.
Peking Express (second plaza past $n-d j i n n-a a r r i n g s)$ Price: L

Rating : 0.5
If there is a Chinese equivalent of a greasy spoon, it is this. The 'spicy' dishes are merely greasy, the others are not much better.

Pierre's (uptown Waterloo on King St.)
Price : H Rating : 5
An excellent place to dine. The food is great and the service is particularly attentive. The best in the imediate vicinity.

Shin Shin (uptown Waterloo on King St.)
Price :
Rating : 3.5
Not for lovers of hot Szechuan dishes, but neither is this the place for those with mild tastes. No choice of strength is offered - dishes are served with uniform spice.

Smithy's (Westmount Plaza)
Price: ML Rating : 1
It is close, and the breakfasts aren't so bad, but not the place to go for lunch or dinner.
Swiss Castle (far east on King St.)
Price : H
Rating : 4.5
One of the better restaurants, this is a good place to
try if you are in the area, and have the money.
Swiss Chalet (Weber north of University I think)
Rating : 2
Price : ML when t trouble myself to say much about big chains.
Texas Bar- BM (Waterloo Square)
Rating : 0
Some people don't think this is quite this bad.
Then Ho (Weber north of Erb St.)
Price : MH Rating : 2
A pleasant European restaurant with some decorations which ere very vaguely Oriental. THe food is along similar lines.

## Wah Ming (first plaza past $n$-djinn-earrings) <br> Price : ML Rating : 4

Surprisingly good Chinese cuisine very near to UW. I observed a number of Thai or Indian dishes on the menu but none of the standard American Cantonese or Szechuan ones. The cooking is normally good, but the Din Sun offered here was merely mediocre.

Well, I'd like to thank everybody who helped in production of this issue. Thanks, Scooter! Also, maybe I should thank the spectators, D. and D., whose enthusiastic commentary encouraged as tremendously My apologies to stewart for my comment in the last issue. Thanks bo Tom Watts for editing the frost issue so I didn't have to. Thanks contributed during the term, because of them we special thanks to all those who have renews's ever. Thanks to Tom Trey for his regular have had one of the best summer mathNenes, to Len Popp, Ignatius Lenin, the U. T.s. Cuspidor, and the Wall st. Journal for providing us with articles other than our own reprints. Thanks to the former editors, WJimJordam and Mark Kahnt for helping evenafor Thanks to both Charles
 and Cary Timar for being (occasionally, mp. Bed, and Beverly (who typed in rain), and anyone else who Nev, and Stere, and Andy, Thanks to stan for the free donuts, and MathSoc for the free pieta. Thanks to the Valkyrie and all those others who at various times offered to help. Thanks to everybody whose comments helped me. Thanks to everyone who read mathNEL/S this term. It made me feel gratified, seeing you reading this. Thanks in particular to the girl fore name I t till and appearing to besideme in C\&O 230 on our first publication day for actually asking to $1: 00$ nim. to ask for a copy. It's been beside me in ca o
enjoy it. Thanks also to the guy who
a greet term. Thanks, everybody!

> A fred Ed. Cary /hi mir vo
> Newman

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## 104835 to ADDRESS your Computer

(from the Official Computer Hater's Handbook)

1. Dear Computer
2. My Esteemed Machine
3. Honourable Machine Head
4. You attinit\& Piece of Junk
5. Get It Right This Time, Idiot
6. This Is Your Last Chance, Bimbo
7. Dear Money Sucker
8. Listen, Clown
9. Are You In There?
10. Hello, God, It's Me Again

Well, when we published this poll, we expected that some of you apathetic people out there might actually submit some responses, seeing as you had your work outlined for you already, and it would take about as much time as another yawn in class.

It seems we were wrong. Not one single person submitted a response. The closest we came was one anonymous Federation butterfly (also, I think, a T.A.) who sent in a set of responses. Our thanks to it. (I think that's correct, for a butterfly.)

We will not here bother to print the feeble flutterings of this single creature. This is supposed to be yous paper!! Why do we need to repeat so often : " Wirirs! ! RESPOMD!! GRIPE!! DRAW!! DOCDLE!! SUBMIT SOLCTHIMG!!!" ? You're all big now. You shouldn't need to be told what you should do, you should just do it!! Come on, Earth. If you can't even take an interest in your local affairs... I just don't know. Bloody apathetic planet, I'd say.

## COBOL is coming!

During the winter-1972 term, the department of applied analysis \& computer science will present a series of introductory lectures on programming in the COBOL language.

All students enrolled in a co-operative program who do not have COBOL programming experience are encouraged to take these lectures. In particular, students in first year should attend, as their opportunities for work-term employment may be enhanced with this extra background.

The lectures will be presented in one two-hour session per week. There are two sections, one with lectures on monday nights, the other with lectures on tuesday nights. Lectures start at $7: 00 \mathrm{pm}$ in N\&:C. 2065 , on 24 january for the monday nignt sections, or 25 january ior the tuesday nig't section.

Students will be able to run COBOL programs at the student terminal to gain practical experience.

There will be no fee for this course, nor any credit.


1. Using integration, show how you would calculate the volume of PacMan:
a) at starting position.
b) after eating one block of 'dots'.
c) after eating the power pill.
d) after consuming one monster, two monsters, and three monsters:
2. Using Raabe's theorem, show when the series

$$
B^{n}+\cdots B^{n-1}+\cdots B^{n-2}+\cdots \cdots+i^{n}
$$

is absolutely escaped or absolutely consumed.
3. Find the inverse of the transformation $\mathcal{B}+$ pill $=$ strength.
4. Find the work done when the force, $F$ is $\dot{A}$, velocity is dot(...) for the interval $3 \odot$ to $\infty$
5. Find the general solution for playing the PacMan.

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|  |

1. a) $\int \infty d(p a c)$ - hungry $P a c$
b) $\iint_{\square} \cdot d B$; where $\square$ is the size of the block.
c) $\int$ strength $d$ (maze), where $\circ$ is the pill, strength $\in$ pills.
d) $\iint_{\text {EAT }} \mathrm{m} Q$
2. If $B=\lim _{n \rightarrow \infty} n\left\{\right.$ 宏 $\left.-\left|\frac{d}{d L_{0}}\right|\right\}$
then the series escapes absolutely for $B>1$ and is consumed or conditionally escaped for $3<1$
3. 



5. Lots, lots \$\$\$\$\$\$\$


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