math NEWS

volume 2 issue 2

June 17

$$2^{2+\frac{2}{2}}$$

Ristorante
Review

First, I must apologise for any confusion my article of last issue might have caused. As some of you will have realised, Benton Street does not intersect Highland. The correct cross-street for Kelsey's is Belmont.

Bensen's (on Frederick Street, one block from the Kitchener Transit terminal)

This restaurant is **the** place to go for an excellent but expensive dinner (for instance, if you want to impress your girlfriend, take her here). The food is excellent, the wines are excellent, and the service only erred in asking my approval of the house wine on one occasion. (The patron's approval should be asked for bottled wines, but not for a house wine -- the house is responsible for house wines.) If you have the money, try Bensen's.

Charlie's Ristorante and Tavern (Charles Street, two blocks north of Queen)

An Italian style restaurant, Charlie's offers selections other than the traditional pizza and spaghetti, but not many. The quality of the food is reasonable, and the service is passable. This would be a good place to visit if its prices were lower.

Henry's Happy Endings (Highland Road, between Westmount and Belmont, on the southeast side)

Henry's offers good cooking at reasonable prices, but has a rather limited menu. Frequently, the rolls accompanying some dishes are freshly baked. The dessert selection is good, and strawberries are almost always available. Service here is excellent.

Marbles (right behind the Ali Baba and the donut shop by Waterloo Square)

Marbles specializes in hamburgers of all sorts. These are good. So is the service, usually. The prices are very reasonable. (If this is beginning to seem terse, it's because I'm composing it well past my bedtime.)

Tien Hoa Inn (Weber and Bridgeport)

A touch of the Orient in a very European restaurant. The food is poor, and not particularly Oriental, the atmosphere is distinctly European, despite the Chinese decorations, and the table settings are quite Occidental. The prices are correspondingly higher than in most local Chinese restaurants. The Tien Hoa is not worth spending money on.

Reminder to all Stan's (and Beverly's) Friends :

Stan's and Beverly's Megabash will be held on Saturday, June 25, at Stan's (7 Columbia St. W, just north of King St.). BYOB, BYOP, etc.

Neologology

(The Science of New Words)

This column is inspired by Bill Sherk, the famous Canadian neologologist and author of **Brave New Words** and **More Brave New Words**. The intent of the column is to print student contributions to our ever-growing language (which is no longer English) and pass them on to Mr. Sherk for possible publication in his next book of new words. Of course, proper credit will hopefully be given. Some local words, such as **scums** or **bunrise** will not be sent because they are of no use outside of the UW campus.

If you would like to contribute to this column, drop your word, definition and explanation into the **mathNEWS** mail box, or mail it to the userid watbun!mathnews.

Here are this week's words.

ambicokepepsivalent (adj.) Not caring whether one drinks Coke or Pepsi. (From ambivalent--showing no preference; Coke--a popular brand of cola; Pepsi--another popular brand of cola whose manufacturers think is more popular than Coke) Coined by John Plaice.

scums (n.) The pronunciation of the abbreviation SCMS (Student CMS). Also a description of SCMS designers.

bunrise (n.) The time of the first Honeywell 66/80 connection after a testing session, preventive maintenance or a crash. (From bun--Honeywell 66/80; rise--to get up)

fedophobia (n.) Fear of the Federation of Students or anything even remotely connected to it. See **simoniphobia**. (From fed--abbreviation for the Federation of Students and phobia--an irrational (in most cases; however, in this case it is justified) fear)

obnocturnal (adj.) **1.** Pertaining to late-night disc jockeys, particularly on CFNY-FM but not on CHOM-FM or CFCA-FM. **2.** Pertaining to activities after a pub. (From obnoxious and nocturnal.) Coined by David Leibold.

msism (em-sism) A palindrome. Coined by Jim Jordan.

The Brittany (between King and Duke Sts. just past Market Square)
The Brittany offers what is in all likelihood the best food in the twin cities. The proprietor (and cook) is actually from France, and his food has won several awards. The restaurant is the only one in the K-W that is mentioned in Where to Eat in Canada. There is nothing in the menu that should not be recommended, but my favorite is their rabbit --- I can't remember what the French term was. One thing you should know, though --- these gourmet delights don't come cheap, and you can expect to pay at least $20-$30 per person excluding wine. You should definitely make an advance reservation, and dress appropriately.

Bert's Cellar (On Scott Street, opposite Market Square) The former Market Cellar now has a new proprietor, Bert, and thus the name change. This is a small, quiet restaurant offering Chef Bert's specialties, plus several austro-hungarian dishes such as schnitzels and goulash. The specialties are mostly meat or poultry cooked in a way similar to cooking wild boar or pheasent etc., and I was more impressed by the schnitzels. A huge schnitzel with potato salad or french fries cost between $5 and $7, depending on the type, and they are quite excellent for the price. Another item that should also be recommended is their onion soup. A large bowl of soup, made faithfully following the French original, cost under $2. This restaurant is highly recommended in its price range.

Cooperative College

Canada's Waterloo University Reaches an Apex In Math Majors by Putting Its Students to Work

By Kevin Quinn
Staff Reporter of The Wall Street Journal.

WATERLOO, Ontario—John Gibson, a cocky, brainy 22-year-old from Aurora, just north of Toronto, turned down scholarships from two of Canada's best universities so he could attend the University of Waterloo, which says it has more math majors than any other school outside the Soviet Union. Lori Ker, a friendly 21-year-old in her third year, also came here dispite a couple of other offers.

What attracted these two and most of the other 3,600 math students here is Waterloo's "cooperative" program, which gives students a chance to work during alternate terms in jobs related to their studies. "You work up a lot of good contacts working in co-op," Mr. Gibson explains. "When you come out of university you don't have to take the first job." Miss Ker agrees. "I wouldn't have come here if it wasn't for the co-op program," she says. "You grow a lot as a person, being in co-op and having responsibilities."

Math students are often thought to be eggheads who drift off to sleep with differential equations and the binomial theorem dancing through their heads. Maybe that caricature explains why U.S. colleges and universities awarded only 10,200 math bachelor's degrees in 1979-80, 40% fewer than five years earlier, according to the Washington-based Conference Board of the Mathematical Sciences.

But things are different in this city of 55,-000, about 75 miles from Toronto and known mostly for its farmers' market. This is a hotbed of mathematics.

Practice Makes Perfect

At Waterloo, more than a fifth of the 16,-264 full-time students major in math. Waterloo chases high-school math students the way Madison venue stalks soap consumers. "If you want to succeed, you have to be different," says Douglas Lawson, a professor. "If that involves acting a bit like an advertising firm, that's fine. It's worked for us."

Students in Waterloo's math faculty, or math college as it would be called in the U.S., study computing, actuarial science, statistics, accounting, operations research, and other practical applications of math. They can then use their skills to earn salaries in the "co-op" program as they work for companies, usually in Canada. The accent is on math, but the practical experience "draws the kids like flies," says Arthur Beaumont, who teaches applied math.

This approach works so well that Waterloo professors tend to be incredulous that some other schools of Waterloo's size have so few math majors. "Why do they have only 20 or 30 students?" Prof. Beaumont demands. "It's because they don't put in programs that appeal to the students. Many math departments still provide programs at the undergraduate level as if all their students were going to be Ph.D.s."

Waterloo isn't the only North American school to emphasize math, of course. But Richard Anderson, the retired past president of the Mathematical Association of America says it was among the first to make math more relevant. "They deserve plaudits," he says.

Gerald Hagey, Waterloo's first president, in 1957, was a tire company advertising executive who wanted a university that would be business-oriented but not a technical college. To accomplish that, and to differentiate the college from competing schools, Waterloo became a co-op university.

Drawing Disdain

That suited the first math chairman, Ralph Stanton. "I always wanted to have a double-barreled approach to math—for its own sake and also stressing all the wonderful things you can do with it," he recalls. "If you try to do math only for its own sake, you restrict yourself to being a carbon copy of 300 other math schools."

Prof. Stanton saw that the then-infant computer could solve previously intractable problems, and end the traditional dichotomy between rigid mathematical solutions to classroom problems and the more-improvised solutions people actually used. So Waterloo put its students to work on the primitive computers of the late 1950s and early 1960s; most other schools reserved them for graduate students or professors. These days, Waterloo has more computers than telephones.

Mr. Stanton also set up programs so math students could specialize in electrical engineering, computing, accounting and other fields, and he put them in the co-op system so they would have on-the-job experience. "Since it was a new university, we didn't have an established hierarchy telling us it hadn't been done that way before," says Prof. Lawson, who was among the first graduates.

Other schools viewed Waterloo's initiatives with "apprehension or disdain," says Douglas Wright, the first engineering dean and now president. But he and other administrators attracted professors by arguing that they could try something new at Waterloo.

One faculty recruit was Wesley Graham, whom colleagues now credit with building Waterloo's computer-science program. Despite a master's degree in math with top marks, Prof. Graham had discovered that he wasn't qualified to do anything but teach. So he had worked for International Business Machines Corp. to gain practical experience.

Tears and Cash

Prof. Graham was shocked to encounter problems that he hadn't seen before. "They were terrific problems, with lots of math in them, but everyone just did them by the seat of his pants," he says. "They weren't known to the educational system—I didn't learn about them in school. And I thought, 'by God, we should be teaching problems like this in school!'"

When Prof. Graham came to Waterloo in 1959, the school was only a building or two surrounded mostly by pasture. "My mother-in-law actually cried when she saw the place," he says, "but it was an opportunity I couldn't turn down. A lot of people came here because they could do things they couldn't at other, conservative institutions. We used to order computers without any idea how we were going to pay for them."

Heavy student use of computers led to Waterloo's developing software to solve its own problems, then selling it elsewhere. In 1964, for example, Prof. Graham and four students developed Watfor, which made the Fortran language simpler for students to see and cheaper for universities to operate.

At Waterloo, students use computers so much that IBM and its Canadian unit recently gave the school equipment worth $8.9 million and cash so it could develop software to make IBM's personal computer suitable as a teaching tool. "They certainly have one of the best computer science departments in the world," says Albert Shurgalia, an IBM project administrator.

The math faculty works hard to recruit good students, keeping in touch with the many high-school math teachers who attended Waterloo. It also sponsors math exams taken by 80,000 high schoolers a year, and 10,000 more visit the campus. The result is that the best high-school math students hear about Waterloo.

The "very hard sell" that President Wright describes seems to work. Waterloo consistently attracts more high schoolers with averages above 80% than any of Ontario's 13 other universities. In the Putnam math competition, an exacting, six-hour test taken by college math students across North America each December, Waterloo recently placed second behind Harvard, and ahead of California Institute of Technology, Yale and Princeton.

It can't be said that students come to Waterloo for its social life. There aren't any sororities or fraternities. "This isn't a party school," says John Gibson. Hardly anyone squawked last year when the school raised its fees for a co-op math student 21%, to $583 a study term.

The co-op program seems to be the magnet for most students: Of the 3,600 math students, about 2,700 are in co-op programs, including 1,900 primarily interested in computer science. The work experiences aren't always happy, however. Garth Gibson, John's 23-year-old brother, graduated recently and now works at Mitel Corp., a high-tech concern in Ottawa, a job he got after spending two school terms there. But during one term working at the Canadian unit of an American company, he says, he "worked in-house doing a useless project. I sat on my butt for 11 weeks, and that should never happen."

But his brother, who is spending two work terms at each of three companies, is "totally" glad he passed up a traditional education. After getting his math degree, he plans to be accredited as an accountant. Then, he will do an M.B.A.

REAL PROGRAMERS DON'T WRITE SPECS

Real Programmers don't write specs -- users should consider themselves lucky to get any programs at all, and take what they get.

Real Programmers don't comment their code. If it was hard to write, it should be hard to understand.

Real Programmers don't write application programs, they program right down on the bare metal. Application programming is for feebs who can't do systems programming.

Real Programmers don't eat quiche. They eat Twinkies. And Szechuan food. Do not go to eat Szechuan food with a group of Real Programmers unless you are prepared to argue bitterly over the last spring roll.

Real Programmers don't write in COBOL. COBOL is for wimpy application programmers.

Real Programmers' programs never work right the first time. But if you throw them on the machine they can be patched into working condition in "only a few" 30-hour debugging sessions.

Real Programmers don't write in FORTRAN. FORTRAN is for pip stress freaks and crystallography weenies.

Real Programmers never work 9 to 5. If they are there at 9 a.m., it's because they haven't left yet.

Real Programmers don't write in BASIC. Actually, no programmers write in BASIC... after age twelve.

Real Programmers don't play tennis, or any other sport which requires changing clothes. Mountain climbing is fine, and Real Programmers often wear their climbing boots to work in case a mountain should appear in the computer room.

Real Programmers don't write in PL/I. PL/I is for programmers who can't decide whether to write in COBOL or FORTRAN.

Real Programmers don't do documentation. Documentation is for simps who can't figure out the listing.

Real Programmers don't write in Pascal, Mesa, Ada, or any of those other pinko computer science languages. Strong typing is for people with weak memories.

Theory of Integration

1) What is integration?

2) Why study it?

3) How do we cure it?

Integration is a form of mind control. It is not aimed at actually <u>controlling</u> your mind, but at causing synaptic dissociation and mental instability. In short, insanity. (Or even unsanity, in extreme cases.)

The human mind is unable to function properly when confronted with situations that demand a solution, yet have no solution. The result : madness. The invention of "solutions" that have no basis in fact, which are merely outlets for induced insanity. Such is integration.

How can the answers be justified? The so-called "experts" give explanations involving very profound abstractions that require you to use numbers that do not (and can not) exist. Is this a method of solving problems, or is it a plot to destroy our minds?

Is $\int \frac{1}{x} dx = \ln(x)$ true? Definitely not! We are told that integrals are amazingly and immensely useful. They represent area, volume, work, and all sorts of measurements. But none of these numbers they come up with really exist. They are "limits". A limit is not a number. It is an arbitrary abstraction.

The purposes behind the study of integrals is to warp our minds so that we cannot see or understand what our governments are doing for (and to) us. Have you ever stopped to think about how many pieces of paper the government has for every person in the country? Hundreds. Maybe thousands. All in triplicate. Billions of papers, in millions of filing cabinets, served by thousands of clerks. [They must have heard of database technology by now! -- Ed.] All of which accomplishes nothing. Nothing, that is, except give the government an excuse to spend millions of our tax dollars on something useless. Why don't people realize what is going on? Integrals. Their minds are all screwed up from trying to do partial fractions in an imaginary vector space.

Think for a moment, weren't all the teachers who taught integrals to you just a little unbalanced? Some of them were not wrapped too tightly.

What can we do to repair the damage done to our minds? Not much. $\int$ LogCabin = Houseboat can cause permanent insanity. $\int e^{2x}(1-x)^n dx = ?$ Cute, but deadly.

Abolition of limits and differential calculus is the only solution. Some mild cases can be cured with intensive group theory sessions, but for the most part, we can only hope to save future generations from integrals. Join the normal subgroup. <u>Abolish integrals</u>!

Melvin Vockler

THIS WEEK'S TORUS

FREE ~~vERSs~~ verse PUnS

Puns.
I'm pondering.
Pondering puns.
Ponderous puns.
Yes, I'm pondering ponderous puns.
You might say, I have a penchant for puns.
You might not.
Actually, you might think I'm insane.
Actually, you might be right.
Actually, I'm not insane.
Actually, I rationalize too much.
I know it's not original, dammit!
But it's a good thought.
What I'm really doing is searching.
For what?
For a truly aesthetic alliteration.
It's a tough search.
Especially if you consider that most of the population
                          of Earth is somewhat illiterate.
So I'm searching for alliteration for illiterates.
This is a literary search.

Melvin Vockler

Squash Ladder

1. The Squash Ladder is open to all Math Students.

2. A match win is defined to be winning 3 regulation squash games out of a possible 5.

3. One must play at least one match each week. Failure to do so results in the player dropping two levels and being replaced by a player picked at random from the lower level.

4. The match winner is responsible for recording the match results on the pyramid and on the "Weekly Summary Sheet".

5. An official listing will be posted every Friday at noon.

6. Player A may challenge Player B iff Player B ranks on either of the two levels directly above Player A.

7. Direct all questions to the Squash Ladder Administrators:
Steve Lightstone 885-2106 (ENGLAND)
Greg Van Staveren 885-2106 (U.S.A.)

Note : Any Math student not currently on the ladder may challenge anybody on the seventh level, and then move up.

ENCOUNTEr

The light rose in the sky. It brightened as it rose, illuminating the ground from the heavens. It blinded the cows, making them low helplessly. Some cows cried out in Pain. Then the bomb exploded. It ripped a huge hole in the cargo bay of the ship. The atmosphere poured out into space. Enemy fire rained on the hull in a fury. The sides started to melt from the heat. The cows were sucked into the empty void [sic] where they exploded, due to the difference of the pressures. Of the cows, Harold was the smartest. Quickly donning a spacesuit, helmet, boots, gloves, shin pads, elbow pads, and sweat band, he grabbed a laser and allowed himself to be sucked out into the Great Void.

But, alas! He had forgotten air tanks. He, too, exploded but after twice as long as the other dumb cows.

Johnny Androyd

editorial

The Masthead just isn't enough for me. I need to write an editorial as well. This is partly because mathNEWS needs every article we can get. We do have some new contributors, but a number of the writers in the first issue did not submit anything for this issue. We need YOUR help.

Next time you are sitting, bored, in Algebra, watching your prof prove the self-evident or the incomprehensible, set your pen to paper. Scribble something, profound or otherwise, and when it's finished, drop it into the black mathNEWS box across from the C & D lounge. Chances are, we'll print it. (Of course, we aren't the Enginews, so the article must not be excessively obscene, but then Mathies are more respectable, less depraved, creatures than the n-djinn-ears annyway, and wouldn't think of such things.)

We would also welcome art work, or nearly anything else that we could somehow print. If you would like to help in typing or layout, talk to Cary Timar (no relation), or drop a note into the mathNEWS box. Your assistance would be very much appreciated.

If all goes well, mathNEWS will be published every third week this term. This means that the schedule for issue #3 will be as follows:

Articles submitted by	Monday, July 4
Typing finished by	Monday,, July 4
Art work submitted by	Tuesday, July 5
Production	7:00 p.m., Tuesday, July 5
mathNEWS available	Friday, July 8

PLEASE HELP.

Alfred Ed.

Schedule Book of an Average Mathie

4:30 Get up and work on Calculus *Still can't do it*	4:20 Missed Transfer ~~4:00 Start Dinner~~ *Go get some food!*
7:00 Have Breakfast *No milk.* *Poured beer on cereal. Rice Krispies* *went 'Snap, crackle, HIC!'*	5:00 ~~Dinner~~ *Arrived at Beckers Chips* *Cookies Butter* *Cake Donuts* *TV dinner Coffee*
7:30 Get Dressed *Must do laundry* *someday*	*Make Dinner* 6:00 ~~Do Dishes~~ *Low on Beer* *Forgot Milk!* 6:30 *Eat!*
8:00 Catch Bus. *Couldn't find Physics* *Assignment!* *Stupid Bus was early!*	7:00 Work on CS *Called Bob—* *Party 9:30 at Ray's*
8:55 ~~8:30~~ Physics *Hate that class*	8:00 Look over Italian *Stupid language*
9:30 Phil *worked on calculus still* *couldn't get questions* *4 to 8*	8:30 Do Phil *Done in 5 minutes* *had a beer (2 left)*
10:30 Calculus *I'm lost*	9:00 Finish Calculus *Laura called got answer for* *2 (Not same as mine) John's 6 is* *wrong.*
11:30 Lunch *Don't eat Coffee Shop* *Hamburgers!*	9:15 Left for Ray's Party 10:00 Good Night World! *New Phone Numbers :* *Janet 555-0471* *Lorrie 555-2848* *Carrie 884-4499*
12:00 Work on Calculus NOON *Dot #6, from John.* *Mary says 4 can't be done.* *3 is wrong.*	*Anna 555-1492* *39-26-38!* 1:30 *Got Home* 1:40 *Remembered can't do* *Calculus any*
1:30 Algebra *Fell asleep. Woke up at 3*	2:30 *set alarm* *for 4:30 to get up and* *work on Calculus*
3:10 *Missed* ~~2:30~~ Chemistry	

EEEEEEEEEEE

$$\det \mu(L) P_{\infty} M_k(i;t)$$
$$A \to B \; P_A(x) \, C_t \, \Im_{l \cdot} d(\alpha, \beta)$$
$$E_R \cap S^1 \, P_{ij} \, A^{-1} \, C \, [0,1]$$
$$[A:B] \; \dim V \, \|\alpha\| \, A * S_t$$
$$\text{type} \, (n; r, s) \; \text{diag} (d_1, \ldots$$
$$\mathcal{L}_n \, (\alpha \backslash \beta) \, [\gamma]_t \, S_i \, T$$

algebra...!