Mathematics Council NEWSLETTER

The Alberta Teachers' Association

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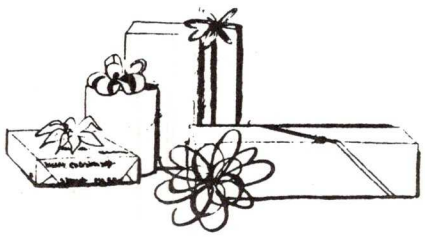
From the Editor



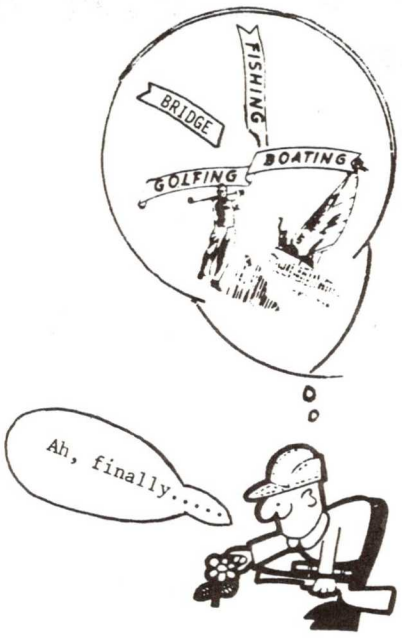
The 24th Annual MCATA Conference is now history. My own assessment of the conference has to be one of general satisfaction. There were over 50 sessions presented, covering all levels of mathematics education from kindergarten to grade twelve. I personally sat in on a number of very good sessions which provided food for thought and practical ideas for the classroom.

Unfortunately, the weatherman was most uncooperative, and this definitely had a negative effect on attendance. A large number of people, from the deep south in particular, were not prepared to risk the hazards of blowing snow and slippery roads to attend. For this, they cannot be blamed.

The 1985 Conference is to be held in Lethbridge during the period October 24 through 26, 1985. Please note the change to a full two-day conference rather than a one-day conference. If you have ideas for sessions or speakers, please send them to Hank Boer, 105 Chippewa Crescent, Lethbridge T1K 5D4. He can be reached by telephone at 327-1454 (residence) or 327-4521 (business).

In closing, a special thank-you goes to Dick Pawloff and his committee for all the effort they put into organizing the Red Deer Conference.

MCATA Bids Farewell to "Rifleman" Chuck Connors



I had the privilege of making a presentation to the "Rifleman of Barnett House," Chuck Connors, who has recently retired. Chuck, in his unassuming way, made a significant contribution to MCATA as the council's ATA staff adviser for a period of nine years.

This, of course, was only one of many significant contributions made to education in Alberta during his career. He initially became active in ATA affairs while serving on the local executive in the city of Lethbridge, where he taught math and science for a period of 15 years.

Chuck joined the executive staff at Barnett House in 1967 in the area of Member Services. He served as coordinator of that department since 1979.

Teacher pensions was another area of particular interest to Chuck. He served on the Pension Committee during his whole time at Barnett House.

During his retirement, Chuck will spend time at his cottage at Lake Isle, play some golf and bridge, and continue to encourage teachers to be active in the affairs of their Association.

Refunds Available

If you were one of the unlucky people who paid your registration fee of $50.00 for the Red Deer Conference and, because of the severe weather conditions, could not attend, you may apply for a refund of $40.00. MCATA had to pay the banquet fee of $10.00.

Refunds are available from MCATA Treasurer Virinder Anand, 88 Fawcett Crescent, St. Albert, Alberta T8N 1W3.

MCATA Fees to Go Up

As of January 1, 1985, membership in MCATA will cost you $20.00. This increase will bring our fees into line with those of a majority of the councils. If you renew your membership before this time, you can renew for the current price of $15.00.

Do it today!

What's New?

The following publication should be of particular interest to all mathematics teachers. The professional library of every school should have at least one copy.

Enjoy Bulk Rate Savings on February 1985 Arithmetic Teacher: "Mathematical Thinking"

The February 1985 issue of Arithmetic Teacher, NCTM's journal for elementary school teachers of mathematics, will have a theme so vital that your school may wish to order that issue in bulk. Therefore, the editorial panel is making possible a low prepublication price on orders of 50 or more copies to be sent to the same address.

The February 1985 Arithmetic Teacher, "Mathematical Thinking," explores the complexity of children's mathematical thinking. The authors maintain that good mathematical thinking can be developed in students, and that this development should be an essential part of any mathematics program. The article gives examples of how mathematical thinking can be developed as specific content or processes are taught.

A special prepublication price of $1.00 per copy will be in effect until December 5 when you order 50 or more copies to be sent to one address. Single copies can be ordered for $4.00 each.

Mini-Conference a Success

On September 21, Crescent Heights High School in Medicine Hat was the location for the first MCATA mini-conference. In all, 52 teachers from Medicine Hat and area attended. Based on requests from teachers and superintendents, four sessions were planned.

Both morning sessions focused on problem solving. Ron Cammaert, Math Consultant, Lethbridge Regional Office, and MCATA president, offered the senior high session. Mary Jo Maas, a Fort Macleod teacher and MCATA secretary, spoke to junior high teachers on using "groups of four" techniques in problem solving.

The afternoon sessions dealt with the use of manipulatives in the classroom. Bob Michie, Math Department, Winston Churchill High School, Calgary, and George Ditto, Math Consultant, Calgary Board of Education, jointly presented the senior high session. Ron Cammaert spoke on the use of manipulatives in the junior math curriculum.

Attitudes Toward Mathematics

by Marilyn N. Suydam
Ohio State University, Columbus, OH 43212

EDITOR'S NOTE: This article taken from the November 1984 issue of the Arithmetic Teacher interested me. The big question is: "What happens after grade six to turn students off mathematics?" This should be a concern to all of us.

An individual's attitude toward mathematics has many facets, ranging from awareness of the structural beauty of mathematics and of its usefulness to feelings about the difficulty and challenge of learning mathematics to interest in a particular type of mathematics or particular method of learning or teaching mathematics. What do we know about the attitudes of elementary school pupils toward mathematics?

- Mathematics is liked and enjoyed by the majority of elementary school children.
- About a third of the pupils rank mathematics as their best-liked subject.
- Few differences are found between the attitudes toward mathematics of elementary school girls and boys.
- Generally, attitudes toward mathematics tend to remain positive until sixth grade, and then become increasingly less positive as students progress through school.
- Only a small relationship has been found between students' attitudes toward mathematics and their achievement in it.
- Limited evidence has been found that teachers' attitudes toward mathematics affect pupils' attitudes toward the subject. This effect may be cumulative: the type of teachers' attitudes encountered over several years may influence students' attitudes.
- Attitudes toward mathematics are probably formed and modified by many forces, including teachers' enthusiasm and methods, parents and other adults, classmates and other children, self-concept, learning style, and experiences with mathematics in and out of the school.

What can teachers do to improve students' attitudes toward mathematics? Research findings provide some clues:

- Show that you like mathematics.
- Make mathematics enjoyable so that children develop positive perceptions of mathematics and of themselves in relation to mathematics.
- Show that mathematics is useful, both in careers and in everyday life.
- Adapt instruction to students' interests.
- Establish short-term goals that students have a reasonable chance of attaining.
- Make provision for experiences designed to help children be successful in mathematics.
- Show that mathematics is understandable by using meaningful methods of teaching.

Best Problem Corner

1. A circle and a square have the same area. What is the ratio of the area of a circle inscribed in the square to the area of a square inscribed in the circle?

2. Determine the constants c and k so that

$$\frac{2n^6 + 6n^5 + 5n^4 + cn^2}{k}$$

c = _____

k = _____

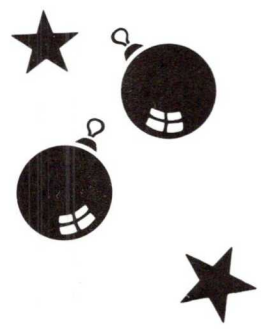
will be a formula for completing the sum

$$1^5 + 2^5 + 3^5 + \ldots + n^5$$

3. The owner of a store is figuring his profits for two weeks. He figured a profit of $374.40, but this is not the amount he received in sales. His profit is gained by subtracting what he paid for the merchandise from the amount that he sold it for and then subtracting 10% of this amount for Mulroney's tax collection. If he sells his products for 80% more than he buys them for, how much did he receive in sales alone?

The Faces of Calculus

NEWTON, LEIBNIZ, EULER, GAUSS, CAUCHY, RIEMANN, SNELL, DESCARTES, FERMAT, PASCAL, BERNOULLI, L'HOPITAL, TAYLOR, MACLAURIN, CRAMER, LAMBERT, LAGRANGE, BOLZANO, WEIERSTRASS, STOKES. Can you find each of these names in the maze below?



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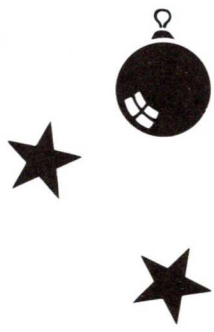

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From the RED DEER CONFERENCE

President's Report

It has been a pleasure and a privilege to serve as president for my first term over this past year. The Executive Committee met twice during the year, once in Calgary and once in Edmonton. We also had two telephone conference calls.

The meeting in Edmonton was a departure from previous practice in that we utilized the format of a "Thinkers' Workshop" borrowed from the Health and Physical Education Council. The major outcome of this meeting was the formation of committees to try to improve member services. The four committees were convention, publication, membership, and current issues:

- The Convention Committee has been active in assisting planning for this conference and next year's conference in Lethbridge. Through one of the committee members, Diane Congdon, a mini-conference was held in Medicine Hat on September 21. If other members would like to arrange for a mini-conference in their area, please contact Dick Kopan or Gary Hill. The committee has also been busy compiling a list of speakers, which we hope to publish soon.
- The Publication Committee, consisting of Gordon Nicol, John Percevault, Art Jorgensen, Geoff Butler, and Mary Jo Maas, has been assisting with the publication of the Newsletter and Delta-K.
- The Membership Committee, consisting of Joe Krywolt, Henry Taschuk, and Virinder Anand, has been active with promoting membership through contacting universities, manning booths at teachers' conventions, promoting NCTM, developing a contact network, revising application forms, and developing promotional material. The committee has ordered membership pins, which should be available within the next two months.
- The Current Issues Committee drafted a letter supporting the inclusion of Mathematics 31 as part of Rutherford Scholarship criteria. This committee is currently conducting a study of mathematics teacher preparation. Committee members are Louise Frame, Bob Michie, and Ron Cammaert.

We would like to express our appreciation to Dick Kopan, Louise Frame, and Bob Michie for the fine conference held in Calgary last year. We are anticipating an equally fine conference in Red Deer. A special thank-you to Dick Pawloff and all of his volunteers.

Last February, Vice-President Bob Michie and I were invited to an NCTM-sponsored leadership conference for executive officers from the four western provinces. Bob and I were able to pick up several valuable suggestions and insight at this meeting.

Five hundred copies of our Monograph No. 7: Problem Solving in the Mathematics Classroom have been purchased by NCTM for distribution and sale across North

America. We are currently obtaining articles for two monographs. One on motivation will be edited by Tom Schroeder, and the other, on Logo, is being edited by Geoff Butler. If you are interested in contributing, please contact Tom or Geoff.

The only MCATA regional, the South West Regional, remains very active in and around Lethbridge. The executive invites any other interested groups to apply to the MCATA executive for assistance in forming a regional for their area.

Finally, a thank-you to the members of the executive for their hard work and co-operation over this past year. We would like to express our special thanks to Chuck Connors, who has been our ATA staff adviser over the past several years and has now retired.

Respectfully submitted,

Ron Cammaert

Annual Business Meeting

1. Approval of minutes of annual meeting 1983-10-28

   Moved - B. Brooks Seconded - V. Anand Carried.

2. Introduction of 1984-85 executive

3. Treasurer's Report (V. Anand)

   (a) Statement

   Motion to accept the 1983-84 statement

   Moved - V. Anand Seconded - B. Michie Carried.

   (b) Proposed Budget

   - Motion to accept the 1983-84 proposed budget

   Moved - V. Anand Seconded - F. Glanfield Carried.

4. President's Report (R. Cammaert)

5. Motion for increase of fees.

   An increase in fees for membership is needed to offset costs of services to members - in particular, the increased cost of mailing. This motion comes to the annual meeting on the recommendation of the executive. In order to consider a motion for which notice has not been given, a two-thirds majority vote is necessary to waive the requirement for a notice of motion.

   Moved - B. Michie Seconded - P. McGlachlin

   Discussion: R. Wollsey agreed to represent MCATA at Executive Council.

   Recommendation that we increase fees

- Motion from Executive Council that we increase membership fees as follows:

Regular	$20.00
Associate	20.00
Subscription	25.00
Student	5.00

- Effective 1985 - 01 - 01

Moved - R. Cammaert Seconded - M. Bye Carried.

6. Conventions

(a) 1985 Convention - Lethbridge, October 25 - 27
Hank Boer presented an overview of MCATA Conference 1985. Sounds unique and exciting. The committee is hoping to get a keynote speaker from NASA.

(b) 1986 Convention - Edmonton, October 17 - 19
NCTM name-of-site

7. Monographs

Requests for submissions to both monographs.

Motion for adjournment moved - M. Bye.

Proposed Budget for 1984-85

EXPECTED REVENUE	
Membership Dues	$10,000.
ATA Grants	6,100.
Interest	250.
	$16,350.
The balance of the money to come from the reserve	335.
	$16,685.

PROJECTED EXPENDITURES	
Executive Meetings	$ 4,500.
NCTM Conference	1,000.
NCTM Affiliation	75.
Telephones	1,200.
Supplies	150.
High School Prize	500.
Math Contest Monograph	3,000.
Edmonton Jr./Math Contest	100.
Calgary Jr./Math Contest	100.
Regional Grant	60.
Newsletter	2,400.
Delta-K	1,800.
Canadian Math Teacher	1,000.
Membership Committee	200.
Miscellaneous	600.
Total	$16,685.

Will You Be There?

JAMES M. SHERRILL

Candidate for
Canadian Regional Representative on NCTM Board

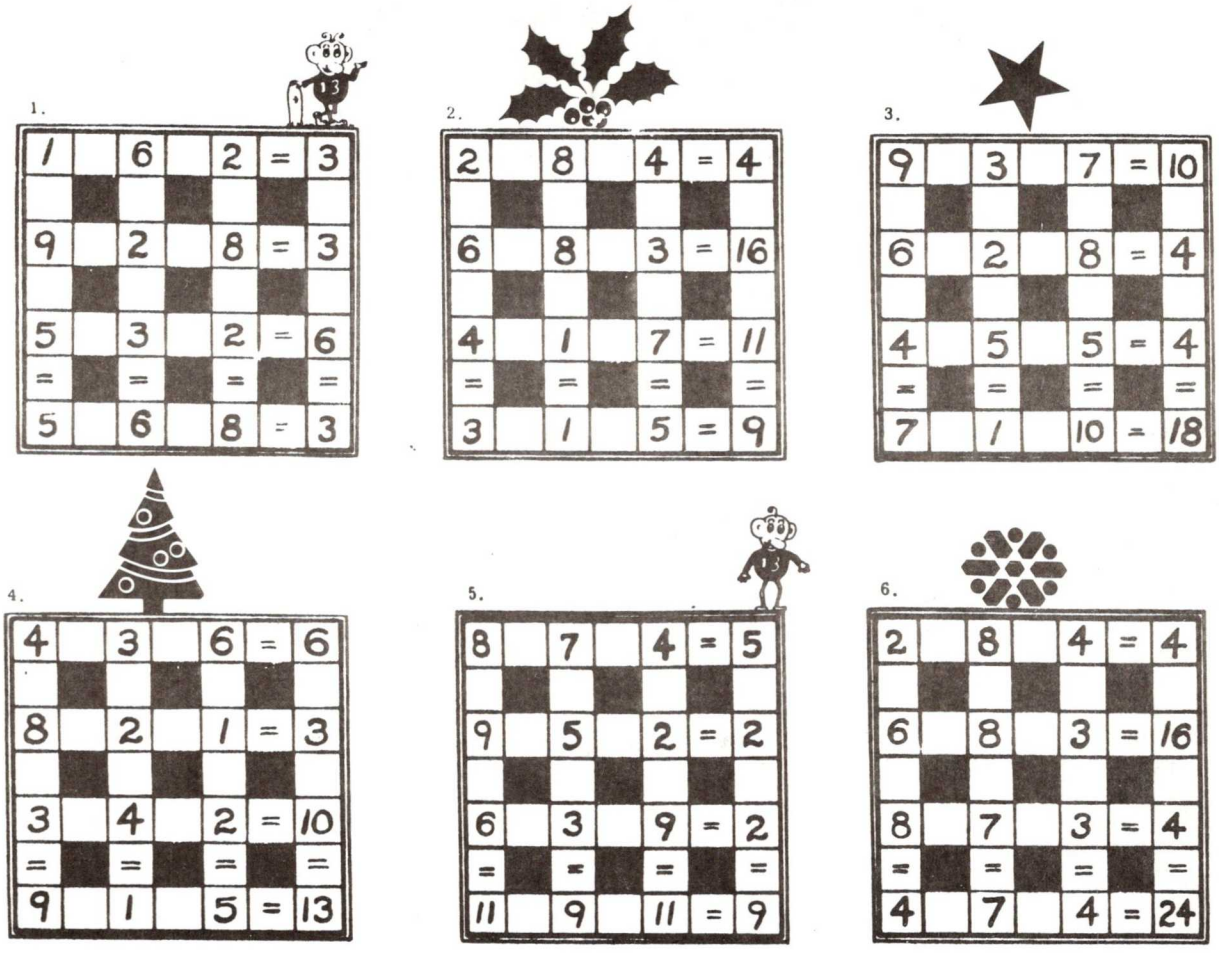
* Professor, Department of Mathematics and Science Education, University of British Columbia.
* Taught experimental classes at grades four and five (1971), three (1972), and eight (1974), University of Texas at San Antonio (1975), Simon Fraser University (1978), University of British Columbia (1970 - present).
* Professional Activities: Planning Committee of the 1973, 1982, and 1985 Northwest Mathematics Conferences and the 1980 Conference of the RCDPM; 1977 and 1981 B.C. Mathematics Assessment, member of the Science Council of Canada discussion group on the future of mathematics in Canada (led to the founding of the CMESG), secretary and treasurer of SIGRME (1975-77), reviewer for School Science and Mathematics and Investigations in Mathematics Education.
* Has authored articles in the AT, JRME, SSM, Canadian Journal of Education, Alberta Journal of Educational Research, and journals of the NCTM-affiliated groups in British Columbia, Alberta, Saskatchewan, and Ontario.

A special thanks to CANON CANADA INC. for making available a computer for a prize at the Red Deer Convention. The big winner:

MIKE KISCHUK (Lamont, Alberta)

Cross Number Puzzles with Signs

Here's still another kind of cross-number puzzle. Numbers are arranged to provide a given result, but the arithmetical signs of operation are missing. You are to insert the signs of operation in the empty spaces so as to provide the indicated results with the given numbers. A correct solution will "check out" horizontally and vertically.



Solutions to
BEST PROBLEM CORNER:

1. $\pi^2 : 8$
2. $c = \bar{1}$; $k = 12$
3. $936.00