THE ALBERTA TEACHERS' ASSOCIATION

MATHEMATICS COUNCIL

NEWSLETTER

Volume III, Number 1, November, 1963

Contents

PRESIDENT'S MESSAGE

The Mathematics Council of The Alberta Teachers' Association is beginning the third year of its life. Under the presidency of Tom Rieger in its embryonic stage, of John Cherniwchan in its first year and of Fred Tarlton in its second year, the character and personality of the council has begun to emerge and be recognized. Certainly it is too young an organization to have its voice heard throughout the province

but it has received attention in areas surrounding Calgary, Red Deer Edmonton and Grande Prairie. It has been a precocious child in that it has shown leadership not of youth but of experience.

I am charged with the responsibility of guiding the council through the current year. Thank goodness I have the support of a strong executive! We have planned activities for the next eight months, one of which results in the publication you are reading now. Watch for subsequent issues containing announcements of events to come. Do what you can to make our MCATA a vital force in the teaching of mathematics in Alberta. - T. P. Atkinson

REPORTS OF EXECUTIVE AND LOCAL MEETINGS

The meeting of the MCATA Executive was held October 19 at Barnett House with all executive members present, including those from Calgary and representatives from Red Deer and Edmonton Locals. Details regarding the value and advisability of purchasing the Lindstedt TV films for use by the council was assessed. Problems of editing and organization of the MCATA Newsletter and Yearbook were discussed and a budget of $600 was approved for publications for the current year. Dates of publication will be November 30, January 30,

The provincial executive confers on a matter of policy (left to right): Dr. Allan Gibb, Gordon Jepson, Mrs. M. Hutchinson, Mrs. Jean Martin, T. P. Atkinson, Fred Tarlton, and T. Rempel.

and April 30. The Professional Lead of Alberta Teachers" (one in a series of research monographs published by The Alberta Teachers' Association) will be studied by the Calgary members of the executive and a report made to the association.

Affiliation with the National Council of Teachers of Mathematics was approved by resolution. Problems arising where a member of one council partakes of the services of another council, such as attending seminars and obtaining publications, were discussed and referred for further action at a later date. General plans for seminars indicate they will be held next July at the same locations. The advisability of the general meeting being held at this time was tentatively approved.

A meeting of the executive of the Edmonton Area Regional Local MCATA was held at O'Leary High School on October 29 for the purpose of making plans for the inservice training program initiated by them as a project for this year. Ross Sheppard and Scona Composite High Schools are booked Tuesday and Thursday nights from January 9 to March 19 (February 13 excluded), for ten lecture and workshop sessions dealing with topics under consideration for the revised junior high school mathematics curriculum. The list of instructors is an impressive one and includes a fine distribution from the Department of Education, the University of Alberta and The Alberta Teachers' Association.

On the basis of information to this date a possible schedule was drawn up, subject to revision.

Topic	Tuesday Evening	Thursday Evening
Sets	T. P. Atkinson Larry Tymko	J. S. Hrabi N. L. Hrynyk
Number Systems	M. T. Sillito Irene Buckles	R. M. Fysh Dr. Warren Bailey

Numeration	J. Wood Mrs. M. Hutchinson	Fred Tarlton Mrs. M. Herchek
Problem Solving	N. M. Purvis Jack Kirkconnell	A. B. Evenson Mrs. M. Govenchuk
Geometry	A. B. Evenson G. Lambert	J. Cherniwchan Dr. Doyal Nelson

Members of the MCATA will be charged for instructional material; non-members are to be assessed an additional dollar. The executive plans to have the sessions culminate with a banquet for participating instructors.

GAINING PERSPECTIVE: A LOOK AT BRITISH COLUMBIA AND SASKATCHEWAN

Editor's Note: In an effort to identify MCATA problems with those of our counterparts in our closest sister provinces, the editor sent a ten-point questionnaire to A. Wayne Kerr, Editor, Saskatchewan Mathematics Teachers' Society (SMTS) and J. F. Clark, President, British Columbia Association of Mathematics Teachers (BCAMT). In substance, here are the answers. Wide differences of viewpoint, function or structure which appear to exist between our organization and SMTS or BCAMT will be underlined.

Questionnaire with Answers as Indicated

QUESTION 1 - When was your Mathematics Society formed? Was it promoted by your teachers' association? When did the need become apparent?

SMTS - The Saskatchewan Mathematics Teachers' Society was organized in August, 1961, by a group of teachers attending the International Nickel Mathematics Seminar held at the University of Saskatchewan. The STF central office staff encouraged the initial organization. The need for the Society was visualized for many years, but the seminar

pointed out the opportunities for organization. The Society was formed basically to improve mathematics instruction at all levels within the province of Saskatchewan.

BCAMT - The B.C. Association of Mathematics Teachers was created in the spring of 1959. Impetus was given by the BCTF in order to create a better climate and machinery for inservice education. The magnitude of changes was expected to exceed the ability of the BCTF to handle.

QUESTION 2 - What financial aid is provided by your provincial association? What must you do to qualify? Are there special grants to locals?

SMTS - The STF grants $300 per annum to the SMTS. In addition the STF provides secretarial and other related services as well as bearing the full cost of printing, publishing, and mailing all publications and other communication to members. Central office facilities are available to executive and committee personnel. The executive of the STF accepts formation of similar groups of teachers whose aim is the improvement of subject teaching and whose membership is largely drawn from the teaching body.

BCAMT - The BCTF allows $2 for each paid up member in the preceding year. At present we have an additional dollar in revenue paid by each member each year. The expected enrolment of 400 is about the same as last year so we have an operating budget of $1200. The cost of materials and labor is charged to our account by the BCTF which takes care of membership lists, addressograph plates, layout and design, printing and binding of newsletters (five or six each year) and two journals. Except for emergencies all office and clerical work is provided by the BCTF.

QUESTION 3 - Do you have a record of inservice training? Where and when did you have non-credit workshops? Under whose sponsorship?

SMTS - The SMTS has encouraged workshops. Scattered throughout the province have been evening, one-day, and two-day workshops in

mathematics. Centres for these workshops have been both large and small cities, large and small towns. The Society encourages these activities, supplies resource persons for them, and will also provide resource materials. The local groups bear the cost.

In addition in 1963, the Society developed, through the formal acceptance of the University of Saskatchewan, a series of five-day non-credit courses pertaining to the teaching of a new Grade IX mathematics course. Members of the Society taught these courses. Also the Society drew up a full-credit course in mathematics for teachers which was approved by the University of Saskatchewan and offered in the summer of 1963.

BCAMT - The inservice training committee of the BCTF still coordinates a good deal of the activities engaged in by the Association. This is due, in part, to their desire to be of service and their experience in handling such affairs. The continuity of executive members would not enable any organization to be as competent as such members of our BCTF staff as Bill Allester. A second reason is that if two or more areas wish to collaborate on a workshop or bring a special speaker the main BCTF committee has access to funds of up to $100 which may be granted to pay half the essential expenses involved. The normal wear and tear on budgets of our association does not permit us to help with financing.

Non-credit workshops lasting one week were held at the University of British Columbia in May 1962 to bring selected teachers from each of the 80 B.C. school districts up to date on a modern mathematics course to begin in September 1962.

Two-week workshops were held at UBC and Victoria College in the summer of 1962 and again in 1963. A session in 1963 was held at Penticton. Around 1958, the BCTF annual dues were raised approximately $10 in order to provide cash for expanded inservice work. In some instances school boards have hired visiting experts for six or eight, two-hour-a-week sessions on math.

It is also to be noted again that under Dr. R. D. James the mathematics department at the University of British Columbia has done its

best to provide credit courses in areas of concern to teachers of mathematics.

QUESTION 4 - What part have you taken in change or formation of curriculum? When have you been consulted? Have you presented resolutions? Have you had representation on special committees?

SMTS - Curriculum proposals are formally passed on to the STF Curriculum Committee through the Society's curriculum committee. In turn the STF committee acts jointly with the Department of Education on such referrals. However, the Society has been asked directly to overview prospective texts for new courses in Grade IX to Grade XII as well as tentative courses themselves.

Three of the four members of the Department of Education Committee revising the high school mathematics course of study are Society members. However, these men were appointed by the Department and not by the Society.

BCAMT - The cooperation of Departmental officials in this regard can only be listed as excellent. They are asking and taking advice from good teachers. The entire academic program from Grade VIII to Grade XIII is being revised with the help of teachers who report to our association and get help from its members. The situation is almost beyond understanding in terms of a decade ago.

QUESTION 5 - Do you feel that the members have been kept well informed? By what means? Have any trends been actively sponsored and specially treated? How?

SMTS - Trends and course developments are presented to members through articles in the SMTS newsletters and through two-day annual conventions of the Society.

The SMTS has promoted all developments respecting introduction and teaching of the revised courses in high school mathematics. The Society is presently promoting many developments in the elementary mathematics programs.

BCAMT - The association publishes newsletters about five times a year. Two journals are considered par each year. Special bulletins (two so far this fall) can be sent out in less than a week. Our next major task is to get rolling on the non-academic courses. Programmed learning has received a fair share of space in our publications.

QUESTION 6 - What people have in one way or another given service above the call of duty or contributed through special talent to your present success? Please name and give particulars.

SMTS - Active in the formation of the Society have been D. M Keith, responsible for developing province-wide meetings, university credit and non-credit courses; J. M. Grasley, responsible for organizing inservice training and acting as liaison with the university in setting up and teaching the experimental course for Grade IX; Dr. R. Arn, writer, lecturer and promoter of change; Dr. G.H.M. Thomas, director of INCO seminar in 1961 and academic adviser for new programs for the Department of Education.

BCAMT - The most well-known exponent of modern mathematics in the BCTF is Lloyd J. Costley, secondary supervisor in Burnaby. He has handled the two-week workshops, weekend conventions and also been active in the revision committee work.

Second is Jack Lydiard, a math teacher in one of Vancouver's largest high schools, with his TV lessons and work on the revision committee.

Roger Desprez, teacher in Nanaimo is editor of our journal.

QUESTION 7 - What has your Mathematics Society done to promote participation at the local level (local societies, sublocals, special branches)? Name branches, date of formation and accomplishments.

SMTS - Locals are organized to study mathematics. Their organization is encouraged by and often established with assistance of SMTS resource persons. However, SMTS feels that locals need not be rigidly bound to the Society through constitution, dues, or other formality. The SMTS merely hopes that local members will be

encouraged to study mathematics. Several projects are suggested to individual locals and assistance given in providing materials and personnel. If they so wish, local members are encouraged to become SMTS members, but no drive in this regard is made. The SMTS wants only those who are really desirous of SMTS membership to apply.

BCAMT - This is one area where there is little to report. The number of math teachers in British Columbia outside the metropolitan areas is limited and not all are "organization-minded." (1) East Kootenay teachers have gained permission to give an accelerated academic program to selected pupils. (2) Kitimat teachers sponsored a workshop weekend last May. (The organizer left teaching to work for International Business Machines.) (3) Burnaby teachers (many working with SMSG courses) plan a large scale mathematics meeting next October. A science fair under similar sponsorship in Burnaby attracted 1300 teachers two years ago. (4) Vancouver Island teachers have requested assistance in setting up an organization and wish to sponsor a workshop on our new Grade VIII course.

QUESTION 8 - Has your Mathematics Society considered specialization within its membership? By this I mean formation of special groups for high school mathematics and junior high school mathematics? If so, what steps (progress) have been made in this regard?

SMTS - No specialization within the Society has taken place. The 1964 convention, to be held at Easter, will run concurrent sessions for high school and elementary school teachers for about one-half of the convention time.

BCAMT - No effort has been made yet to do anything except keep moving. The probable future course will be to involve as many teachers at all levels in our set-up as we can. The vertical integration idea seems like a good plan to us.

QUESTION 9 - What groups do you have for research or similar activities? Have you supervised or promoted this, under your leadership? Where? Did you feel the project was justified?

SMTS - We have the following projects on a provincial level at the present time: (1) creation of library lists for the new mathematics programs - graded for initial purchase, for teacher use and for student use, together with supplementary lists; (2) a study of teacher training of mathematics teachers in Saskatchewan; (3) a study of curriculum proposals; and (4) a career monograph for Canadian mathematics students.

BCAMT - Again the BCTF has an active research committee. We have been asked to cooperate with them on programmed instruction activities. Such areas as Vancouver do this sort of thing on their own. The number of such projects is not known. We will be assisting an individual teacher in a province-wide survey of teacher-pupil reactions to our changing mathematics curriculum. This teacher experimented in several local schools in the Trail area and is now revising the questionnaire for wider use.

QUESTION 10 - Please add as much more as you feel necessary for us to become briefly acquainted with your aims and accomplishments.

SMTS - No answer.

BCAMT - Up to this point the organization has been busy establishing itself. With no effort to attract other than secondary teachers we have four hundred. The year-by-year changeover to modern math has caused a lot of pressure which has only been met through the leadership of BCTF officers. We are very concerned about adequate programs for the non-academic and have barely begun to do anything. We are also concerned about teacher education and extending the knowledge of mathematics to encompass the entire school system.

On a broader front we are affiliated with the National Council of Teachers of Mathematics and have participated in a large weekend meeting held this October in Yakima, Washington. In three or four years' time we expect to be host at this annual Northwest Conference which will easily attract a thousand or more teachers. By charging $10 registration fee it will be possible to attract people such as Beberman, Dolciani, Frank Allen, or any other noted Americans.

REPORT ON THE NCTM SUMMER CONVENTION, by H. L. Larson

Editor's Note: Mr. Larson was lecturer for the three Edmonton Seminars sponsored by the MCATA last July. Subsequently he represented the Mathematics Council at the NCTM held in August at Eugene, Oregon. Over 800 mathematicians attended this convention, of which 25 were from Canada and several from Western Europe. Mr. Larson has divided his report into four sub-topics, of which this - his interpretation of Dr. Max Beberman's lesson - is the first. Mr. Larson expresses the hope that some of Dr. Beberman's inspiration may shine through and he makes apologies for that which is lost in this transmission.

A Mathematics Lecture, by Dr. Max Beberman - "Functions and Geometry"

"Much of what we call mathematics teaching is taken up with the mechanical manipulation of algebraic symbols. There is far too little effort given to ideas and concepts," says this great mathematician who heads up UICSM study group. "For example: Is the weight of man a function of his height?" he asked. Being a rather rotund figure in contrast to the tall, lean chairman beside him, he quickly conceded, "Clearly this is not so!" The following rationale was then developed, showing how geometry can be used to broaden and clarify our mathematics concepts.

I

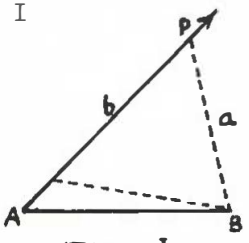

Fig. I

Given: Points A, B fixed, angle A fixed, AP or a "b" variable.

Question: Is "a" a function of "b"?

Answer: Yes. See Fig. II.

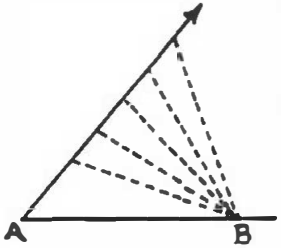

Fig. II

Note: As b varies within its domain, f(b) or a has a range which is numerically related. See Fig. III.

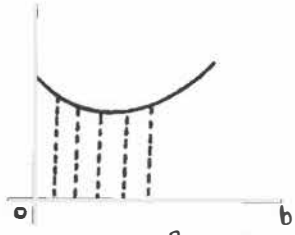

Fig. III $f(b) = a$

Note: We must depict the variables with a minimum of symbolism. The dotted lines roughly indicate some range values.

Question: Is "b" a function of "a"?
Answer: No. See Fig. IV and definition 2.

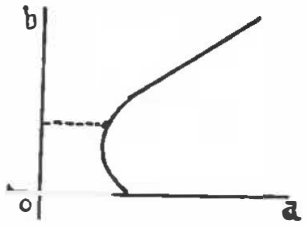

Fig. IV $f(a) \neq b$

Note: One value of "a" has two values for its function. See this also in Figs. I or II.

It would appear from the discussion thus far that some definitions are required:

1- A variable quantity is a function whose Domain consists of objects and Range consists of numbers. (Examine this carefully. We are developing the roots of this concept in elementary grades.)
2- Given two variable quantities with a common domain - "a" is a function of "b" if and only if to each value "b" there is one and only one value of "a".

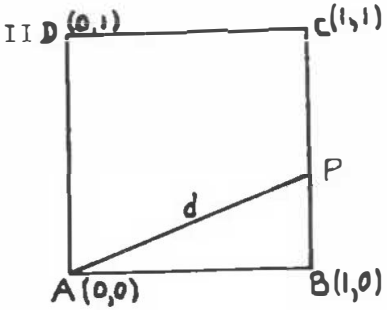

Fig V

Let domain of S be (o . . . 4).
P proceeds from A to B . . .
to A.
Question: Is "d" a function of "s"?
Answer: Yes.
Why: Note Fig. VI.

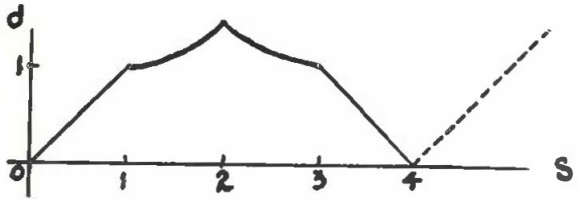

Fig. VI

Note: Every value of "s" has a distinct "d". f(s) is periodic.
Question: Is "s" a function of "d"?
Answer: No.
Why: Let the student draw the inverse graph.

Here is an opportunity for the student to "discover" for himself a quick way of determining the converse of the original question as true or false.

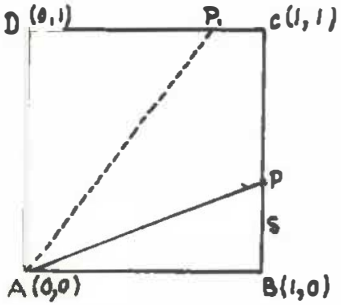

Fig. VII

Let P proceed in counter-clockwise motion as in Fig. V. Plot the Area APB(k) against "s".

Question: Is "k" a function of "s"?

Answer: Check its graph Fig. VIII.

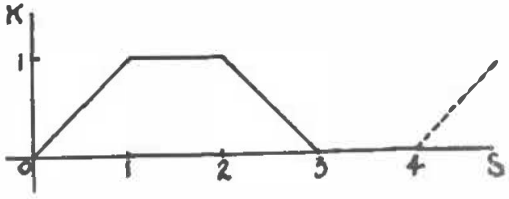

Fig. VIII

Note: "s" is not always the perpendicular to AB. Its length is the distance P has traversed along the perimeter.

III

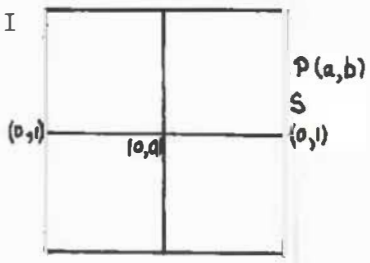

Fig. IX

Is "s" a function of "k"??

Let P proceed as in Fig. VII.

Fig. X $f(s) = a$

Question: Is Is "a" a function of " "s"? Is "b"?

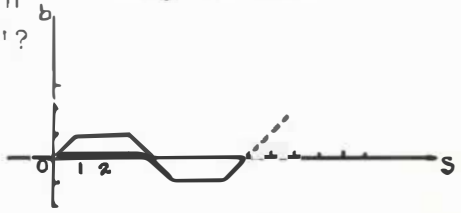

Fig. XI $f(s) = b$

Is "s" a function of "a" or "b"?

Answer: You're on your own.

IV. If by now, some student does not "see" wave motion coming up in Figs. X and XI, cut the corners in Fig. IX and graph "a" against "s" from the octagon -- then n-sides and the circle as n----.

The above rationale may take a couple of periods plus a take-home assignment, but the algebraic symbolism will carry some meaning.

Another stimulating article by Mr. Larson will be published in the January edition of the newsletter. - Editor

INTRODUCING CONTEMPORARY CONCEPTS IN TRADITIONAL ARITHMETIC, by James M. Grasley

Editor's Note: Max Grasley of Saskatchewan has been a tireless worker in that province, in training elementary teachers in modern concepts. He has played a large part in preliminary work for their new course for Grade IX and is very active in the development of training courses at the University of Saskatchewan for junior high school teachers. This article deals with methods any elementary teacher may use in his interpretation of the "new mathematics".

Although most elementary schools are still using traditional arithmetic texts, it is possible for teachers to introduce phases of the "new mathematics" without special fanfare or radical measures. Many teachers hesitate to stray too far from the text and its traditional approaches. If you were to try some of the ideas that follow, you might introduce the flavor of new mathematics into the present course. The content material is clearly traditional but its vocabulary and presentation is that found in contemporary approaches. Once you get used to the unfamiliar vocabulary of the contemporary material, you will see that most ideas presented in new mathematics are quite familiar. I am sure that as the new terms become familiar you will find yourself introducing them where they seem appropriate to your traditional teaching. Maybe there is some comfort in the fact that your pupils have less trouble with the new vocabulary than you will.

As you study the contemporary ideas being advanced, perhaps you can suggest procedures which will allow children to work with familiar operations and interpret them in the light of the new mathematics. By so doing we need not wait years to have the best of the new approach incorporated into our school program. It can be done now.

Number line

Some people find that the number line is a good way to introduce new material. Most traditional texts do very little with the number line and its use to supplement the arithmetic program is excellent.

Careful study of the use of the number line by teachers, from primary to high school, will reveal much material and many approaches for classroom use. Many teachers find use of the number line helps pupils clarify their thinking. Why not have a number line painted on the floor in the room? Children could step off addition and subtraction facts on it. They could use the line to discover the commutative property of addition - from 2 you step off 3 additional spaces and you are at 5 - 2 + 3 = 5. Also from 3, by adding 2, you are at 5 - 3 + 2 = 5.

The associative property of addition could also be discovered by the pupils themselves. After doing the operations physically by stepping them off on the line they could generalize that (2+3) +4 is exactly the same as 2 + (3 + 4) and might even relate it to the previous idea of equality with 4 + (3 + 2). Whether or not the terminology, associative property and commutative property, is used depends on the teacher and class. However, what is important is the idea.

Perhaps a bright pupil might ask why just one side of zero is used. What about numbers to the left of zero? I am sure that such an opportunity would arise long before high school, and negative numbers could be introduced. Using the number line on the floor children could soon be doing examples like 3 + (-4) = -1 and (-4) + (-5) = -9. With a little imagination, some reading of current articles on new mathematics and a few carefully planned lessons, most teachers could supplement their traditional programs with ideas from the new, modern mathematics.

More than one name for a number

Have a set of objects ready for your class to see. Suppose you use five objects in a set - the four fingers and thumb on the left hand; the five pussy willows on a twig or the five girls in the row of desks next to the windows. Have different pupils write on the chalkboard ways of representing the number in the set. You could get: IIIII, 5, V, five, and so on. You could encourage discussion of different ways of naming 5 such as (4 + 1), (3 + 2), (5 x 1), (7 - 2). You could set up a table.

5 = 4 + 1	1 + 4 = 5
5 = 3 + 2	2 + 3 = 5
5 = 5 x 1	1 x 5 = 5
5 = 7 - 2	6 - 1 = 5

Emphasize that the numerals on either side of the equal sign are ways of naming the same number, 5. That these are numerals not numbers should be stressed, for it is basic to the new approach.

This idea of renaming numbers can be used profitably in practice and review exercises. For example, pupils may express 14 in different ways as the sum of two whole numbers:

14 = 7 + 7	14 = 13 + 1
14 = 2 + 12	14 = 0 + 14
14 = 3 + 11	14 = 5 + 9
14 = 4 + 10	14 = 8 + 6
14 = 6 + 8	14 = 11 + 3

Or express 14 as the difference of whole numbers three, five or a specific number of ways.

The exercises suggested above can be used by pupils to discover properties of numbers. For example, if they have written 17 as the sum of two whole numbers, they may be asked, "Did you use odd numbers to name 17 as the sum of two whole numbers? Did you use an odd and an even number to name 17 as the sum of two whole numbers?"

Some examples of how the idea "numbers have more than one name" may be used in traditional arithmetic.

1- Write 6 as the sum of two addends where:

a) One addend is a proper fraction and the other is a mixed number, both fractions having the denominator 6.
b) Both addends are mixed numbers, the fractions having the denominator 3
c) One addend is the whole number 4 and the other is an improper fraction having the denominator 2.

2- Name each number as tens and ones in two ways.
   a) 27 (2 tens and 7 ones, 1 ten and 17 ones)
   b) 109 (10 tens and 9 ones, 9 tens and 19 ones)

3- Complete the following sentences.
   a) 286 = 2 hundreds + ____ tens + 6 ones
   b) 286 = 2 hundreds + 5 tens + _____ones
   c) 286 = 1 hundred + ____ tens + 6 ones

4- Name each of the following in three different ways using hundreds, tens and ones.
   a) 405
   b) 312, etc.

5- Name the following using thousands, hundreds, tens, and ones.
   a) 9,125
   b) 3,047, etc.

In addition to the ideas presented above on the use of the number line and on number-numeral distinctions, operations and their opposites, the properties of operations can also be used to blend some contemporary mathematics into the traditional approach.

CURRICULAR DEVELOPMENTS IN MATHEMATICS EDUCATION, by J. S. Hrabi

Editor's Note: Mr. Hrabi has had wide experience in matters of curriculum. Because of his close connection with the Mathematics Council since its formation, his remarks at the 1963 Annual Conference were particularly apt and timely. Following is his summary of curricular developments in Canada and Alberta.

Now let us turn our attention to the Canadian scene. At the elementary level new authorizations have been made within the last three years in British Columbia, Alberta, English-Catholic Quebec, and the Northwest Territories. The Scott-Foresman series, Seeing Through Arithmetic, has been authorized in each of these areas. In Alberta,

the Ginn and Company Arithmetic We Need program was also authorized and is being used in approximately five to ten percent of the schools. At the junior high school level professors Crawford and Rosenburg have developed a Grade VII, VIII and IX series in New Brunswick. This series is still experimental but I understand it is soon to be published. The content which is quite conventional, is characterized by an introduction in Grades VII, VIII and IX of material previously included in higher grades. As mentioned, the Ontario Mathematics Commission prepared an experimental program at the Grade IX level. This program, which has been published by W. J. Gage and Company, bears the title Mathematics 9. The authors are Coleman, De Grande, Mulligan and Totton. This book is now on the recommended list for use in Ontario schools as of September 1963. My understanding is that the book is not being widely used. Also on the recognized list is Mathematics by MacLean, et al, published by Copp Clark Co. This book is a modernized version of an existing text. In Saskatchewan, Modern Algebra, Book 1, by Dolciani, Berman and Freilich, published by Houghton and Mufflin has been authorized at the Grade IX level effective September 1964. This book represents a reasonable marriage of conventional and traditional mathematics. In British Columbia the text Introduction to Mathematics by Brumfiel, Eicholz and Shanks, published by Addison and Wesley (the first text of the Ball State Experimental Mathematics Project) was authorized for use in Grade VIII in September 1962. The text Modern Elementary Algebra by Nichols and Collins, published by Holt, Rinehart and Winston, is authorized for use in Grade IX, in British Columbia, effective September 1963. Both of these texts are quite modern in flavor. In Alberta, the Junior High School Mathematics Subcommittee is experimenting with three series of textbooks at the Grade VII level and two series at the Grade VIII level. It is anticipated that a new authorization will be made possibly in September 1964, but more probably in September 1965.

At the senior high school level no new authorizations have been made in any province to my knowledge. In Alberta, the Mathematics 10 course was modified somewhat by using the authorized text and several references. The vocational mathematics sequence, Mathematics 12, 22 and 32 is in the process of revision as is the commercial sequence Mathematics 11 and 21. In addition, the cities of Edmonton and

Calgary have developed a Mathematics 14 program which is either a preparation for or a part of the Mathematics 10 program. This course is considered to be the first course of a four-year matriculation mathematics sequence. It is anticipated that this course will be available on a provincial basis effective September 1964. My personal view of the entire problem can be summed up as follows. I am very pleased with the situation at the elementary school level. Available research indicates that the programs authorized do result in increased growth in mathematical skills. I am satisfied with the teacher reaction to the new courses, and am happy to see that the Mathematics Council of The Alberta Teachers' Association has been an effective agency in the inservice training of teachers through the seminar conducted in Edmonton during the summer of 1962. I trust that seminars of this nature will continue.

I am also in accord with the trends evident in experimental programs at the junior high school level. I feel we can and should reduce the emphasis on percentage application and increase the mathematical content substantially. Available evidence indicates that the majority of students can learn and enjoy learning the content suggested. Caution is necessary at this level, however, since in Alberta, we are committed to a single program in the junior high school (at least on a provincial basis).

As far as the type of geometry course suitable for the senior high school, I tend to favor a course which begins in a conventional manner, uses synthetic proof and which very early in the course introduces coordinate geometry. This approach gives students an appreciation of the flavor of Euclidean geometry and enables students to use algebraic methods in proving geometric relationships. In my opinion, the algebraic methods are simpler than the geometric methods.

I think, too, that trigonometry may disappear as a separate course and essential trigonometric notions can be integrated into an algebra course. However, caution is advised in developing such a program because many authors, in preparing their texts, treat trigonometry very lightly. Though I feel there is a need for change in mathematics curricula, I maintain that caution is advisable in the introduction of all new mathematics programs. Content should be tested in Alberta

before an authorization to teach the new courses is made and teachers and supervisors must be prepared through inservice training procedures.

I believe that Mathematics 30, prerequisite for university entrance to many faculties, is unrealistic and screens some potentially capable students out of the social sciences. If this prerequisite is maintained, I would favor a Grade XII program of the following nature: (1) A very strong mathematics course which would include an intuitive preparation for calculus. This course could be required of students who wish to major in mathematics, physics, or engineering, and of prospective teachers of mathematics. (2) A second course which would tend to emphasize the importance of mathematics as discipline and how it can contribute to progress in the social sciences. Possible topics in such a course would include probability, statistical inference and linear programming. This course could be required of students who wish to go into the social sciences or into education and would likely be elected by those going into mathematics, physics, and engineering.

Because of curriculum ferment, these are interesting and challenging times for mathematics teachers. I trust you will examine developments in mathematics curriculum with a critical but open-minded attitude and not become over enthusiastic about ideas only because they are new, for I believe this path leads to chaos. I hope, also, that you will not reject ideas only because they are not in accordance with tradition because I believe that this path leads to stagnation. I do hope you will examine as many new curricula as your busy schedule permits and if you find some approaches that seem useful you will try them. This is the path to professional maturity!

MCATA NOTES:

- Students in university with mathematics majors may become an affiliate of the MCATA for a fee of $1.50. Address correspondence to Mrs. J. Martin, Secretary, Ponoka, Alberta.

- Dr. Allan Gibb, Gordon Jepson and Lloyd Richards of Calgary are studying professional load and intend to report to The Alberta Teachers' Association the end of November on behalf of the MCATA.

- Programmed instruction has become a subject of inservice training to Art Lampitt, Sherwood Park and S. Stacey, Edmonton. After completing an ATA course on programmed instruction in November, both members have become resource personnel for the MCATA in this field. Address communications to: Art Lampitt, 392 Conifer Street, Sherwood Park; S. Stacey, 13904 - 88 Avenue, Edmonton.

- MCATA are in the process of affiliation with NCTM. Through this we should gain the benefits of increased information and a wider outlook as well as the inspiration of outstanding personalities in the field of mathematics education.

- The editor would like the names of any persons interested in reviewing books in mathematics education. In appreciation of his work, the reviewer is presented with the book. Communicate with J. E. Holditch, 11035 - 83 Avenue, Edmonton.

- The auditors' report shows that MCATA is free from current financial difficulties and has sufficient funds to carry out its present plans.

- Watch The ATA Magazine and "Professional Development Bulletin" for information about the Edmonton MCATA Regional Inservice Training Program beginning in mid-January.

- The January issue of this publication will concern itself with a number of book reviews. It is a pleasure to report that an

Alberta author of mathematics publications has produced another popular seller. A. B. Evenson's book, Modern Mathematics: Introductory Concepts and Their Implications (published by W. J. Gage, Limited, Box 550, Scarborough, Ontario), has been authorized for textbook use in a teacher training course in Saskatchewan and has sold heavily in British Columbia, eastern Canada and the United States.

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