

# Plus + + +

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The following material is reprinted from Issue No. 6 of Plus + + +, a short magazine informing mathematics educators across Canada about important events, research, curriculum development, and items of national interest.

## **Provincial Mathematics Programs in Canada (1978-79)**

A draft document, entitled *Provincial Mathematics Programs in Canada* as of 1978-79, has been prepared by LaJune Naud, Consultant in Mathematics for the Nova Scotia Department of Education, for the Curriculum Committee of the Council of Ministers of Education of Canada. The data was obtained in part from the official provincial guidelines and in part through direct communication with each department/ministry. In Grades 1-6, it is noted generally that there is less emphasis on abstraction, more exploration of space and shape, more recourse to basic scales, and a tendency to postpone work on fractions. In Grades 7-9, more emphasis is detected on problem solving, application, interdisciplinary aspects, and basic numeric skills. Treatment of algebraic manipulation, factoring, graphing, and statistics varies from province to province. In the upper school, trigonometry is spread over several years. Transformations are increasingly taught and there is a move toward the emphases of Grades 7-9. Lists of topics common to all curricula are given. Appendices include summaries of answers to questionnaires by provincial officials, lists of guides and texts, and summary of programs by provinces.

## **The Canadian Mathematics Olympiad**

The twelfth Canadian Mathematics Olympiad was held on April 30, 1980.

Participating were 205 candidates, 178 of whom were nominated under provincial quotes and 27 by their schools. There were five questions, each worth 20 marks, and one candidate received at least 80. The top three students were:

- John J. Chew  
(University of Toronto Schools, Toronto)  
\$1,000 prize
- David W. Ash  
(Fort William C.I., Thunder Bay)  
\$750 prize
- Stanislav N. Valnicek  
(Evan Hardy C.I., Saskatoon)  
\$500 prize

Eleven of the top 16 students received their certificates and cash awards in person from the Honorable Pauline McGibbon, Lieutenant-Governor of Ontario, at a seminar hosted by the University of Toronto in June. This was the second seminar which has been held for the winners; a previous one was held at the University of Waterloo in 1979.

For the past three years, the administration of the contest has been held under the direction of Professor J.H. Burry of the Department of Mathematics, Memorial University, St. John's, Newfoundland. Now, the contest moves to the University of Alberta.

The Olympiad is open to students nominated either by the provincial Olympiad co-ordinator or by their

school principal. The thirteenth Olympiad will be written on Wednesday, May 6, 1981; nominations should be made by Friday, April 3, 1981. For further information, write:

Dr. J.G. Butler, Olympiad Committee  
Department of Mathematics  
University of Alberta  
Edmonton, Alberta T6G 2G1

### **Mathematical Education Day in Vancouver**

In conjunction with its annual winter meeting, the Canadian Mathematical Society organized a day of special interest to school teachers and community college instructors on the theme "Modern Developments in the Uses of Mathematics" for Friday, December 12, 1980. The eight speakers were from the University of British Columbia and Simon Fraser University. Further information on this meeting can be had from Professor George Bluman, Department of Mathematics, University of British Columbia, 2075 Wesbrook Mall, Vancouver, British Columbia V6T 1W5.

### **Provincial Contests and Exams**

The June 1980 issue of *delta-K*, journal of the Mathematics Council of The Alberta Teachers' Association, edited by Ed Carriger (R.R.1, Site 2, Box 4, Bluffton, Alberta T0C 0M0), carries a report on the C.M.S. 1980 Alberta High School Prize Examination. This contest, won by Robert Morewood of Medicine Hat, consists of two papers: (1) 20 multiple-choice questions, (2) 6 problems (*delta-K* publishes solutions). One of the problems asked the contestants to show that a solid figure, all of whose cross-sections are circles, must be a \_\_\_\_\_ (the reader will undoubtedly identify the missing word).

In the same issue is a report on a diagnostic test of 25 multiple-choice questions given to students in intro-

ductory calculus courses at the University of Alberta. In the most poorly answered question, the respondent had to identify a parabola through  $(-1,0)$ ,  $(0,-1)$ ,  $(1,0)$  (diagrammed) as one of:  $y=(x-1)^2$ ,  $y=x^2-1$ ,  $y^2=1-x^2$ ,  $y=1-x^2$ , none of the foregoing. On the other hand, 89 per cent of 2071 students identified the real values of  $k$  for which  $kx^2+kx+1$  had no real roots.

The question paper for the 1977 Concours mathématique de l'A.M.Q. appears in *La Gazette des Sciences Mathématiques du Québec*, rédacteur en Chef Marc Bourdeau, Ecole Polytechnique, C.P. 6079, Succ. A, Montréal H3C 3A7. There are seven problems, each labelled with a title.

Sample:

"La boule de billard" Considérons une table de billard de 360 cm par 180 cm dont les six poches A,B,C,D,E et F sont disposées comme dans la figure. (A,B,C,D,E,F in clockwise order; B midway between A and C, E midway between D and F.) Une balle est frappée au point O, centre du carré ABEF, et rebondit pour la première fois au point P, à 48 cm du trou B (et 132 cm du trou A). Dans quelle poche ira-t-elle tomber (on négligera la friction, le rayon de la boule et de l'entrée des poches).

### **Canadian Mathematics Education Study Group/Groupe canadien d'étude en didactique des mathématiques**

1981 Meeting: June 5 to 9 at the University of Alberta; open to mathematicians and mathematics educators. Various groups will study mathematics education research, aspects of teacher training, mathematics and language, the history and pedagogy of mathematics, etc. Guest speaker: Dr. Jeremy Kilpatrick, University of Georgia. Information can be obtained from J. Hillel, Department of Mathematics, Concordia University, 7141 Sherbrooke Street West, Montreal, Quebec H4B 1R6.