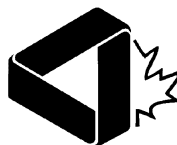


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SYNOPSIS

129 The Academy Corner: No. 32 *Bruce Sawyer*

Featuring readers' solutions to some of the questions of the 1999 Atlantic Provinces Council on the Sciences Annual Mathematics Competition, held this year at Memorial University, St. John's, Newfoundland [1999 : 452].

132 The Olympiad Corner: No. 205 *R.E. Woodrow*

Featuring the Final Round of the 1997 Finnish High School Mathematics Contest; the 1997 Georgian Mathematical Olympiad, XI and X form contests; three parts of the 6th Republic of China Mathematical Olympiad, 1997; the 11th Iberoamerican Mathematical Olympiad held in Costa Rica, 1996; readers' solutions to problems given in the November 1998 number of the **Corner**; readers' solutions to four problems of the Georgian Mathematical Olympiad 1995, Final Round (see [1998: 388]); readers' comments and solutions regarding the problems of the Bi-National Israel-Hungary Competition 1995, [1998: 452]; and readers' comments and solutions to problems of the 31st Spanish Mathematical Olympiad, First Round, given in [1998: 452-453].

147 Book Reviews *Alan Law*

The Sensual (Quadratic) Form

by John Horton Conway, assisted by Francis Y.C. Fung
Reviewed by *Richard K. Guy*, University of Calgary, Calgary, Alberta.

151 An Asymptotic Approximation for the Birthday Problem

S. Ejaz Ahmed and Richard J. McIntosh

It is known that for a class of 23 students the probability that at least two students have the same birthday is more than 0.5. Suppose that the number of days in the calendar tends to infinity. For a fixed number p with $0 < p < 1$ we give an asymptotic formula and a simple proof, not using Stirling's formula, for the minimum class size to ensure a probability of at least p that two or more students have the same birthday.

156 The Skoliad Corner: No. 44 *R.E. Woodrow*

Featuring the problems of the Kangourou Des Mathématiques, Épreuve EUROPÉENNE Cadets (4^{ième}-3^{ième}), written Friday, March 21, 1997; and the solutions to the problems of the 1999 Maritimes Mathematics Competition.

165 Mathematical Mayhem

165 Mayhem Problems

165 High School Problems

H269–H272

166 Advanced Problems

A245–A248

167 Challenge Board Problems

C94, C98

167 Problem of the Month *Jimmy Chui*

168 J.I.R. McKnight Problems Contest 1995

171 How to Solve the Cubic

Naoki Sato

The simple and usual method of solving the quadratic polynomial is “completing the square”; however, as anyone who has tried knows, this is woefully inadequate for the cubic polynomial. And, unlike the quadratic, the solution of the cubic is not a part of the standard high-school curriculum, but is still quite accessible to young students. All that is required is some background in basic polynomial algebra, which we will cover. So now, you too can solve a cubic.

177 Problems: 2525—2538, 2488

This month’s “free sample” is:

2532. *Proposed by Ho-joo Lee, student, Kwangwoon University, Kangwon-Do, South Korea.*

Suppose that a , b and c are positive real numbers satisfying $a^2 + b^2 + c^2 = 1$. Prove that

$$\frac{1}{a^2} + \frac{1}{b^2} + \frac{1}{c^2} \geq 3 + \frac{2(a^3 + b^3 + c^3)}{abc}.$$

180 Solutions: 2426–2430; 2432–2437