27: No 7 NOVEMBER / NOVEMBRE 2001

Published by:

Canadian Mathematical Society
Société mathématique du Canada
577 King Edward, POB/CP 450-A
Ottawa, ON K1N 6N5
Fax/Télec: 613 565 1539

SYNOPSIS

417 The Academy Corner: No. 44 *Bruce Shawyer*

Featuring the Memorial University Fall 2001 Undergraduate Mathematics Competition; and an extra problem that will test your ingenuity.

419 The Olympiad Corner: No. 217 *R.E. Woodrow*

Featuring the selection questions for the Armenian team for IMO99; the 11^{th} form problems of the Russian Mathematical Olympiad 1999; the problems of the Hungary-Israel Mathematical Competition 1999; the Final Round problems of the 12^{th} Korean Mathematical Olympiad; the problems of the Grosman Memorial Mathematical Olympiad 1999, which took place in Israel; readers' solutions to the problems of the Ukrainian Mathematical Olympiad; readers' solutions to problems of the XII Italian Mathematical Olympiad 1996; and readers' solutions to problems of the South African Mathematics Olympiad, Third Round, September 1995.

435 Book Reviews *Alan Law*

The Beginnings and Evolution of Algebra
edited by I. Bashmakova and G. Smirnova
English translation by A. Shenitzer

436 On the closed form of power series

Zeynab Mashreghi and Javad Mashreghi

The Taylor series expansion of the function

$$f(x) \;=\; \frac{(x-1)^m}{m!}\log(1-x)$$

around the origin is used to evaluate $\displaystyle\sum_{k=1}^{\infty}\frac{x^{k+m}}{k(k+1)\ldots(k+m)}$.

Read on!

440 The Skoliad Corner: No. 57 *Shawn Godin*

Featuring the problems of the British Columbia Junior High School Mathematics Contest, 2001, Final Round – Parts A and B; and the problems of the British Columbia Senior High School Mathematics Contest, 2001, Final Round – Part B.

This month's "free sample" is:

M19. *Proposed by the Mayhem staff.*
On the magical island of Xurc, there lives a giant Ecurb. Ecurb has an unlimited supply of special coins that are worth one million dollars each. Ecurb allows people to go into his castle and take as many of these coins as they like, but, they must give some up in order to cross the bridges to leave his island. At each of the five bridges Ecurb demands that you give $\frac{99}{100}$ of a coin more than $\frac{99}{100}$ of the coins in your possession. Coins cannot be cut or broken in any way. If the demand cannot be met Ecurb takes all of your coins and eats one of your feet. How many coins do you have to start with in order to make it off the island with exactly one coin (and both feet)?

This month's "free sample" is:

2676. *Proposed by Vedula N. Murty, Dover, PA, USA.*

Let A, B and C be the angles of a triangle. Show that

$$(\sin A + \sin B + \sin C)^2 \ \le\ 6\,(1 + \cos A \cos B \cos C)\ .$$

When does equality occur?