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SYNOPSIS

417 Skoliad: No. 97  Robert Bilinski
  - National Bank of New Zealand Competition 2000
  - Compétition 2000 de la Banque Nationale de Nouvelle-Zélande
  - Solutions to the 5th annual CNU Regional Mathematics Contest

425 Mathematical Mayhem

425 Mayhem Problems:  M263–M268
428 Mayhem Solutions:  M213–M218
431 Problem of the Month  Ian VanderBurgh
434 Pólya’s Paragon: Remarkable Bissections  Bruce Shawyer

436 The Olympiad Corner: No. 257  R.E. Woodrow
Featuring the Belarus Mathematical Olympiad 2002, Final Round, Categories A, B, and C; the Thai Mathematical OLYMPIAD Examination 2002, Selected Problems; and readers’ solutions to some of the problems from
  - 2001–2002 British Mathematical Olympiad Rounds 1 and 2;
  - the 15th Korean Mathematical Olympiad;
  - the 2002 Yugoslav Mathematical Olympiad;

453 In Memoriam: Robert Barrington Leigh

454 Book Reviews  John Grant McLoughlin

454 Winning Ways for Your Mathematical Plays. Second Edition
  Reviewed by Amar Sodhi

455 USA and International Mathematical Olympiads 2004
  Edited by Titu Andreescu, Zuming Feng, and Po-Shen Loh
  Reviewed by John Grant McLoughlin

456 Hexagons and Inequalities
  by Yakub Aliyev

  Problem 71 from Lewis Carroll’s Pillow Problems states,
In a given Triangle place a Hexagon having its opposite sides equal and parallel, and three of them lying along the sides of the Triangle, and such that its diagonals intersect in a given Point.

The problem has been generalized for the case when the given point is not inside the triangle. The author looks at another way to modify the problem, where the main diagonals of the hexagons will each be parallel to one of the sides.

Enjoy!

462 Problems: 3176–3187

This month’s “free sample” is:

3184. Proposed by Fabio Zucca, Politecnico di Milano, Milano, Italy.

For any real number $x$, let $(x)$ denote the fractional part of $x$; that is, $(x) = x - [x]$, where $[x]$ is the greatest integer not exceeding $x$. Given $n \in \mathbb{Z}$, find all solutions of the equation

$$(x^2) - n(x) = 0.$$ 


Pour tout nombre réel $x$, on note $(x)$ la partie fractionnaire de $x$, c'est-à-dire, $(x) = x - [x]$, où $[x]$ est le plus grand entier ne dépassant pas $x$. Etant donné $n \in \mathbb{Z}$, trouver toutes les solutions de l'équation

$$(x^2) - n(x) = 0.$$ 

466 Solutions: 3072–3084, 3086