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SYNOPSIS

69 Contributor Profile: Richard K. Guy

70 Skoliad: No. 100 *Robert Bilinski*

- Concours de l'Association Mathématique du Québec 2005
- Contest of the Mathematical Association of Quebec 2005
- solutions to the team round of the fifth annual CNU Contest

72 Mathematical Mayhem *Jeff Hooper*

72 Mayhem Editorial *Jeff Hooper*

73 Mayhem Problems: M282–M287

75 Mayhem Solutions: M232–M237

80 Problem of the Month *Ian VanderBurgh*

83 The Olympiad Corner: No. 260 *R.E. Woodrow*

Featuring the Hungarian National Olympiad 2003–2004, Grades 11–12, Round 2 and the Final Round, as well as the First Round for Specialized Classes; the Finnish High School Math Contest 2004; and readers' solutions to some of the problems from

- the 38th Mongolian Mathematical Olympiad, Final Round;
- the 19th Balkan Mathematical Olympiad;
- the Bulgarian Mathematical Olympiad, Final Round, 2003;
- the 2003 Vietnamese Mathematical Olympiad;
- the XXIX Russian Mathematical Olympiad, V (Final) Round, 10th and 11th forms;
- the Romanian Mathematical Olympiad 9th Grade.

98 Book Reviews *John Grant McLoughlin*

98 *Math Made Visual*

by Claudia Alsina and Roger B. Nelsen

Reviewed by J. Chris Fisher

100 *Sensational Shape Problems & Other Puzzles*

by Ivan Moscovich

Reviewed by Tanya Thompson

101 Double Counting Using Incidence Matrices

by Yufei Zhao

Combinatorics problems appear often in math competitions, and they frequently involve scenarios where individuals are associated with organizations, following a set of rules.

To investigate such problems, it is often useful to have a method of representing and visualizing the setup. The author employs incidence matrices for this purpose. Each row of his incidence matrix represents an individual, and each column an organization. A matrix entry is set to 1 if the individual corresponding to its row belongs to the organization corresponding to its column; otherwise, the entry is set to 0.

The author then develops a number of counting principles and applies them to solving a few olympiad level problems.

Enjoy!

109 Problems: 3188, 3213–3225

This month's "free sample" is:

3219. *Proposé par Dan Vetter, Regina, SK.*

A l'approche d'une voiture, un vautour (avec une éducation universitaire !) piqueniquant sur la route va toujours s'envoler dans une direction choisie pour maximiser la distance minimale entre lui et la voiture. Montrer que le rapport de la vitesse de la voiture et celle de l'oiseau est $\sec \theta$, où θ est l'angle entre la trajectoire du vautour et la route.

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3219. *Proposed by Dan Vetter, Regina, SK.*

A vulture with a university education, when approached by a car while dining on the road, will always fly off in a direction chosen to maximize the distance of closest approach of the car. Show that the ratio of the speed of the car to the speed of the bird is $\sec \theta$, where θ is the angle that the vulture's flight path makes with the road.

116 Solutions: 2939, 3114–3124