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### SYNOPSIS

353 Contributor Profile: D.J. Smeenk

354 Skoliad: No. 96    *Robert Bilinski*

- 22<sup>e</sup> Concours de Mathématiques W.J. Blundon, Février 2005
- The 22<sup>nd</sup> W.J. Blundon Mathematics Contest, February 2005
- Solutions to the 2003–04 Concours Montmorency

360 Mathematical Mayhem

360 Mayhem Problems: M257–M262

363 Mayhem Solutions: M207–M212

367 Problem of the Month    *Ian VanderBurgh*

369 Pólya's Paragon: Playing Games with Mathematics (Part II)    *John Grant McLoughlin*

372 The Olympiad Corner: No. 256    *R.E. Woodrow*

Featuring the Iranian Mathematical Olympiad 2002; first, second, and third rounds; an alternative solution to problem 4 of the Hong Kong (China) Olympiad 1999; and readers' solutions to some of the problems from

- the 2<sup>nd</sup> Czech-Polish-Slovak Mathematical Competition 2002;
- the Singapore Mathematical Olympiad 2002, Open Section, Parts A and B;
- the XVIII Italian Mathematical Olympiad 2002;

389 Book Review    *John Grant McLoughlin*

389 *Index to Mathematical Problems 1975–1979*

by Stanley Rabinowitz and Mark Bowron (Eds.)

Reviewed by Edward J. Barbeau

392 An Efficient Construction of the Golden Section

by *Kurt Hoffstetter*

The author shows how to divide efficiently, by ruler and compass, a given segment according to the golden section.

394 Problems: 3163–3175

This month's "free sample" is:

**3169.** *Proposé par Vesselin Dimitrov, National Highschool of Mathematics and Science, Sofia, Bulgarie.*

Soit  $A$  un ensemble fini de nombres réels tel que tout  $a \in A$  puisse univoquement s'écrire sous la forme  $a = b + c$ , où  $b, c \in A$  et  $b \leq c$ .

- (a) Montrer qu'il existe des éléments distincts  $a_1, a_2, \dots, a_k \in A$ , tels que  $a_1 + a_2 + \dots + a_k = 0$ .
- (b)★ Le résultat ci-dessus reste-t-il nécessairement vrai si l'on omet l'unicité de la représentation de  $a$  comme  $a = b + c$ ?

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**3169.** *Proposed by Vesselin Dimitrov, National Highschool of Mathematics and Science, Sofia, Bulgaria.*

Let  $A$  be a finite set of real numbers such that each  $a \in A$  is uniquely expressible as  $a = b + c$ , where  $b, c \in A$  and  $b \leq c$ .

- (a) Prove that there exist distinct elements  $a_1, a_2, \dots, a_k \in A$  such that  $a_1 + a_2 + \dots + a_k = 0$ .
- (b)★ Does this necessarily hold if it is no longer assumed that each representation  $a = b + c$  is unique?

399 Solutions: 3059–3071