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### SYNOPSIS

257 A photo of Jim Totten in his office

258 In Memoriam: James Edward Totten, 1947-2008

259 Totten Commemorative Issue

260 Jim Totten's Reach, by *John Grant McLoughlin*

John Grant McLoughlin describes Jim Totten's math outreach activities in Jim's home province of BC, as seen through the eyes of Jim's colleagues. Anecdotes and stories about Jim abound, some of which also touch on Jim's love of sports and nature. The piece conveys the warmth and affection felt for Jim by those around him, and is an inspiring account of how Jim Totten reached people.

263 Skoliad No. 118    *Lily Yen and Mogens Hansen*

- Cariboo College High School Mathematics Contest 1990, Junior Final, Part B.
- Concours mathématique du Collège Cariboo 1990, Niveau secondaire, finale junior, partie B
- Solutions to the British Columbia Secondary School Mathematics Contest, 2008, Junior Final, Part A

270 Mathematical Mayhem    *Ian VanderBurgh*

270 Mayhem Problems: Totten M1–Totten M10

275 Mayhem Solutions: M363–M368

281 Problem of the Month    *Ian VanderBurgh*

283 The Tanker Problem, by *Ross Honsberger*

Honsberger muses about walking his puppy on a retractable leash, and from there he delves into a problem of a supertanker being circled by a patrol boat. Like a puppy on an invisible leash, the patrol boat gets ahead, cuts across, and falls behind the tanker, thus making a circuit. But how to do it with a given margin of safety? Honsberger shows us how, finishing with a lovely geometrical solution to the problem.

290 The Olympiad Corner: No. 279 *R.E. Woodrow*

Featuring the 37<sup>th</sup> Austrian Mathematical Olympiad, Regional Competition (Qualifying Round) and National Competition (Final Round, Parts 1 and 2); the Brazilian Mathematical Olympiad 2005; the Croatian Mathematical Olympiad 2006, National Competition, 4<sup>th</sup> Grade; the Balkan Mathematical Olympiad 2006; Finnish Mathematical Olympiad 2006, Final Round; and readers' solutions to selected problems from

- the 19<sup>th</sup> Lithuanian Team Contest in Mathematics 2004

304 Book Reviews *Amar Sodhi*

304 *All-Star Mathlete Puzzles*

by Dick Hess

Reviewed by Andy Liu

305 *A Mathematical Mosaic: Patterns & Problem Solving*  
(New Expanded Edition)

by Ravi Vakil

Reviewed by John Grant McLoughlin

305 *A Mathematical Mosaic*

by Ravi Vakil

Reviewed by Jim Totten

307 The British Columbia Secondary School Mathematics Contest

by *Clint Lee*

A history of this contest is presented with mention of the institutions and individuals that participated in its development. Jim Totten contributed greatly to getting this contest to where it is today, and the role that he played is highlighted.

Enjoy!

310 A Duality for Bicentric Quadrilaterals

by *Michel Bataille*

A bicentric quadrilateral is a convex quadrilateral that has both an incircle and a circumcircle. Here the author shows that a bicentric quadrilateral is uniquely determined by three of its sides tangent to a given circle, or by three of its vertices lying on a given circle.

Enjoy!!

313 A Study of Knight's Tours on the Surface of a Cube

by *Awani Kumar*

If the surface of a cube can be unfolded into a plane so that two squares are related by a knight's move, then the knight can move from one of those squares to the other on the cube's surface. A knight's tour on the cube's surface can thus be given by labelling the starting square by "1", then labelling the next square it jumps to by "2", and so forth. One then asks if there are (open or closed) tours with magic properties, such as all rows and columns on the faces having a constant sum.

The author investigates such tours on the surfaces of small cubes, and implores the reader to improve upon his results.

Enjoy!!

320 Totten Problems: TOTTEN 01–TOTTEN 12

Here is a sample from this set of problems dedicated to the lasting memory of Jim Totten:

**TOTTEN–08.** *Proposed by Richard Hoshino, Government of Canada, Ottawa, ON.*

In triangle  $ABC$  suppose that  $AB < AC$ . Let  $D$  and  $M$  be the points on side  $BC$  for which  $AD$  is the angle bisector and  $AM$  is the median. Let  $F$  be on side  $AC$  so that  $AD$  is perpendicular to  $DF$ . Finally, let  $E$  be the intersection of  $AM$  and  $DF$ . Prove that  $AB \cdot DE + AB \cdot DF = AC \cdot EF$ .

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**TOTTEN–08.** *Proposé par Richard Hoshino, Gouvernement du Canada, Ottawa, ON.*

Supposons que dans le triangle  $ABC$ , on a  $AB < AC$ . Soit  $D$  et  $M$  les points sur le côté  $BC$  pour lesquels  $AD$  est la bissectrice et  $AM$  la médiane. Soit  $F$  le point sur le côté  $AC$  tel que  $AD$  soit perpendiculaire à  $DF$ . Soit finalement  $E$  l'intersection de  $AM$  et  $DF$ . Montrer que  $AB \cdot DE + AB \cdot DF = AC \cdot EF$ .

325 Problems: 3451–3462

This month's "free sample" is:

**3459.** *Proposed by Zafar Ahmed, BARC, Mumbai, India.*

Let  $a, b, c$  and  $p, q, r$  be positive real numbers. Prove that if  $q^2 \leq pr$  and  $r^2 \leq pq$ , then

$$\frac{a}{pa + qb + rc} + \frac{b}{pb + qc + ra} + \frac{c}{pc + qa + rb} \leq \frac{3}{p + q + r}.$$

When does equality hold?

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**3459.** *Proposé par Zafar Ahmed, BARC, Mumbai, Inde.*

Soit  $a, b, c$  et  $p, q, r$  des nombres réels positifs. Montrer que si  $q^2 \leq pr$  et  $r^2 \leq pq$ , alors

$$\frac{a}{pa + qb + rc} + \frac{b}{pb + qc + ra} + \frac{c}{pc + qa + rb} \leq \frac{3}{p + q + r}.$$

Quand y a-t-il égalité?

330 Solutions: 2557, 3351–3362