

39: No 6      June / Juin 2013

Published by:

Canadian Mathematical Society  
Société mathématique du Canada  
209 - 1725 St. Laurent Blvd.  
Ottawa, ON K1G 3V4, Canada  
Fax/Télec. : 613 733 8994

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**SYNOPSIS**

247 Editorial      *Shawn Godin*

248 The Contest Corner: No. 16      *Shawn Godin*

248      The Contest Corner Problems: CC76–CC80

250      The Contest Corner Solutions: CC26–CC30

255 The Olympiad Corner: No. 314      *Nicolae Strungaru*

255      The Olympiad Corner Problems: OC136–OC140

257      The Olympiad Corner Solutions: OC76–OC80

261 Book Reviews      *John McLoughlin*

261      *The Joy of  $x$ : A Guided Tour of Math, from One to Infinity*  
by *Steven Strogatz*

262 Problem Solver's Toolkit: No. 6      *J. Chris Fisher*

This is the third of a four part series by *Crux* editor J. Chris Fisher. The goal of the series is to study Harmonic sets. This instalment introduces and examines the Harmonic mean.

266 A Quadrangle's Centroid of Perimeter  
*Rudolf Fritsch and Günter Pickert*

This is the second of a three part series of articles investigating the centroid of vertices, centroid of perimeter and centroid of area for a plane noncrossed quadrangle. In this installment, the centroid of the perimeter is introduced. It is determined when the centroid of the perimeter coincides with the centroid of vertices and when it coincides with the centroid of area.

273 Problems: 3851–3860

This month's "free sample" is:

**3852.** *Proposé par Václav Konečný, Big Rapids, MI, É-U.*

On donne les graphes de deux fonctions  $f$  et  $g$ , positives, continues et croissantes, satisfaisant à  $0 < f(x) < g(x)$  pour tout  $x \geq 0$ . On considère le système d'équations

$$\begin{aligned} f(x_1) + f(x_2) &= K \\ g(x_1) + g(x_2) &= L. \end{aligned}$$

Si  $x_1 > 0$  et  $K > 0$  sont donnés, trouver  $x_2 > 0$  et  $L > 0$  via la construction classique grecque (avec la règle et le compas) de sorte que le système d'équation soit satisfait.

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**3852.** *Proposed by Václav Konečný, Big Rapids, MI, USA.*

Given the graphs of two positive, continuous, increasing functions  $f, g$ , satisfying  $0 < f(x) < g(x)$  for all  $x \geq 0$ . Consider the following system of equations

$$\begin{aligned} f(x_1) + f(x_2) &= K \\ g(x_1) + g(x_2) &= L. \end{aligned}$$

If  $x_1 > 0$  and  $K > 0$  are given, find  $x_2 > 0$  and  $L > 0$  by the Classical Greek construction (compass and straightedge) such that the system of equations is satisfied.

277 Solutions: 3751–3760