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SYNOPSIS

Page  Item
1  Letter from the Editor / Lettre des rédacteurs.
   Some information on the change of editorship, change in subscription
   rates, and change in schedule for CRUX.

3  CONGRATULATIONS to Professor Ron Dunkley, Canadian Mathematics
   Competitions, on being elected as a Member of the Order of Canada.

3  Guidelines for Articles. by Denis Hanson.

4  Unitary Divisor Problems:  K.R.S. Sastry.
   Sastry introduces the unitary extension of super-abundant numbers,
   and proves some results:

   **Theorem 1:** Let \( n = \prod_{i=1}^{k} p_i^{a_i} \) denote the prime decomposition of \( n \) and
   \( D^* = \{ d^* : d^* \text{ is a unitary divisor of } n \} \). Then
   \[
   \sum \phi(d^*) = \prod_{i=1}^{k} [1 + \phi(p_i^{a_i})].
   \]

   **Theorem 2:** Let \( p_k \) denote the \( k^{th} \) prime, \( k = 1, 2, \ldots \). Then \( n = p_1 p_2 \cdots p_k \) is a unitary super abundant number.

   **Theorem 3:** The only unitary super abundant numbers are
   \[
   n_k, \quad k = 1, 2, 3, \ldots.
   \]
   That is
   \[
   2, 6, 30, 210, 2310, \ldots.
   \]
The Skoliad Corner: No. 11 R. E. Woodrow.

A Historical Titbit, featuring a problem taken from a 1894 Ontario Public School textbook.

The Olympiad Corner: No. 171 R. E. Woodrow.

A short Biography of the new Editor-in-Chief.

The Academy Corner: No. 1 Bruce Shawyer.
Introducing a new Corner featuring University Undergraduate Mathematics Competitions, starting with the 1995 Memorial University Undergraduate Mathematics Competition.

Mathematical Literacy: some interesting questions about the history of mathematics.

Book Reviews: Andy Liu.
The Monkey and the Calculator (Le singe et la calculatrice), Aladdin’s Sword (Le sabre d’Aladin).
Both reviewed by Claude Laflamme, University of Calgary.
Both edited by Peter J. Taylor, Australian Mathematics Trust, University of Canberra, P.O. Box 1, Belconnen, A.C.T. 2616, Australia.
Both reviewed by Murray S. Klamkin, University of Alberta.

This month’s “free sample” is:

2102. Proposed by Toshio Seimiya, Kawasaki, Japan.
ABC is a triangle with incentre I. Let P and Q be the feet of the perpendicul ars from A to BI and CI respectively. Prove that
\[
\frac{AP}{BI} + \frac{AQ}{CI} = \cot \frac{A}{2}.
\]