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*Editor's Note:* No new problem sets are given in this corner, as the backlog of readers' solutions is being cleared to make way for a renewed column later in 2011.

In this *Corner* are solutions from readers to some problems from

  - Problems proposed, but not used at the 2007 IMO in Vietnam
  - Bundeswettbewerb Mathematik 2006
  - Bundeswettbewerb Mathematik 2007
  - Republic of Moldova Selection tests for BMO 2007 and IMO 2007
- 44 Book Reviews      *Amar Sodhi*
  - 44 *Alex's Adventures in Numberland*  
by Alex Bellos  
Reviewed by Bruce Shawyer

This month's "free sample" is:

**3610.** *Proposed by Peter Y. Woo, Biola University, La Mirada, CA, USA.*

Let  $S = \{2, 3, 4, 6, 8, 9, 12, 16, 18, 24, 27, \dots\}$  be the set of positive integers whose only prime divisors are **2** or **3**. Let  $a_1 = 2, a_2 = 3, \dots$ , be the elements of  $S$ , with  $a_1 < a_2 < \dots$ .

(i) Determine  $\sum_{i=1}^{\infty} \left(\frac{1}{a_i}\right)$ .

(ii) ★ For each positive integer  $n$ , let  $s(n)$  be the sum of all its divisors including **1** and  $n$  itself. Prove  $\frac{s(n)}{n} < \mathbf{3}$  for all members of  $S$ .

**3610.** *Proposé par Peter Y. Woo, Université Biola, La Mirada, CA, É-U.*

Soit  $S = \{2, 3, 4, 6, 8, 9, 12, 16, 18, 24, 27, \dots\}$  l'ensemble des entiers positifs dont les seuls diviseurs premiers sont **2** ou **3**. Notons  $a_1 = 2, a_2 = 3, \dots$  les éléments de  $S$ , avec  $a_1 < a_2 < \dots$ .

(i) Trouver  $\sum_{i=1}^{\infty} \left(\frac{1}{a_i}\right)$ .

(ii) ★ Pour chaque entier positif  $n$ , soit  $s(n)$  la somme de tous ses diviseurs, y compris **1** et  $n$  lui-même. Montrer que  $\frac{s(n)}{n} < \mathbf{3}$  pour tous les éléments de  $S$ .