

f91 ✓

A2051 (15)

(3) Sandia Laboratories
(4) Albuquerque, New Mexico 87115
May 29, 1974

Dr. N. J. A. Sloane
Org. 1216, MH2C363
Bell Telephone Laboratories, Inc.
600 Mountain Avenue
Murray Hill, New Jersey 07974

Dear Neil:

Thank you for your letter of May 20. I am embarrassed beyond description by my oversight in not including the 10th term in sequence number 1623 which was computed correctly in my original paper. Somehow, in copying down the recomputed sequence, I simply jumped from the 9th to the 11th terms.

From the fact that you printed out sequences 1623 and 1986 at the same time, I assume that you had noticed a simple identity relating them. If we represent the k^{th} terms respectively as G_k and S_k

$$G_k = 2S_{k-1} + 2^k - 1.$$

How on earth did you notice this identity? I have Steffensen's original paper and although it is true that the entries in column $v = 1$ and $v = 2$ on page 95 satisfy this relationship, it isn't immediately apparent in the text.

I am also enclosing a copy of the paper which I gave at the 5th Southeastern Atlantic Conference on Combinatorics, Graph Theory and Computing on Synch-Sets which I had mentioned to you during my visit to Bell Labs. Table 2 summarizes the presently known best results, and in particular, the first nine rows of the first column give the only demonstrated constructions of Golomb's ruler. The larger values for $\lambda = 2$ and 3 are nontrivial and interesting. I have obtained a few additional references since this paper was written, but no new values of $N(k, \lambda)$.

Bob and I would like to thank you and your colleagues at Bell Labs for a very pleasant and profitable visit.

Sincerely,

Gus Simmons

(1) - Dr. G. Gustavus J. Simmons, Manager
(2) - Applied Mathematics Department - 5120

GJS:edw