

scan  
2+1 pages

~~W. W. Shapito~~  
L. W. Shapito  
and  
N. J. A. Sloane  
Correspondence,  
Sep 7 1976  
add to 5 seqs

Sent  
add to list 191

~~NEW SEQS~~

1003  
→ 6318 ~~6308~~  
5043  
90  
354

Dear Dr. Sloane,

This letter is to bring to your attention several small errors in your book on integer sequences.

Drop #N1170

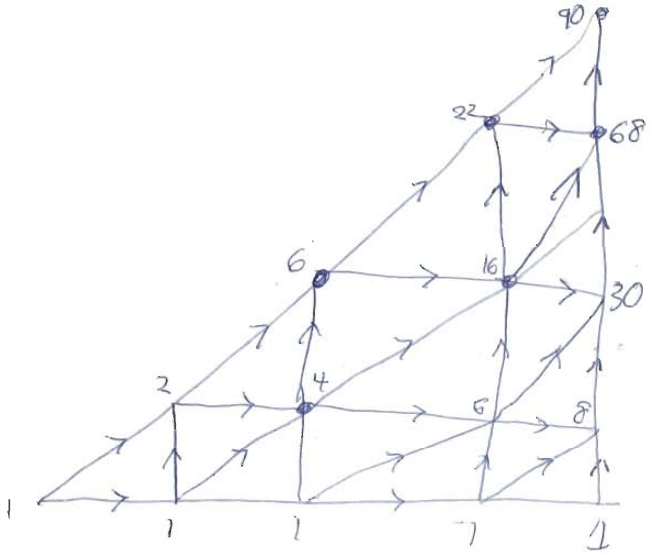
Seq. 1170 should read 1, 3, 11, ~~45~~, 197, 903, ... A1003

which makes it identical to Seq. 1163. It is easy to show that the incomplete dissections of 1163 correspond directly to the incomplete parenthesizations of Schröder's problem. This is shown in Comtet's book. The sequence <sup>obtained</sup> essentially by doubling,  $1, 2, 6, 22, 90, 394, \dots$  is of sufficient independent interest to warrant its own entry.

yes!  
add 2  
~~A6308~~  
6318

add  
new  
seq

For instance in walks on the following lattice, we see this



sequence arise on the main diagonal. Again this is discussed in Comtet's book. There are several other settings where these numbers occur naturally.

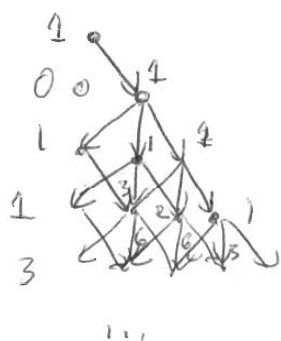
A0090

Seq. 496 ~~496~~ could be better described as "permutations with no 3 cycles" which is the current description of Seq. 816. Seq. 816 is related to this phenomenon but it's difficult to determine exactly how. Seq. 1631 could also use relabeling.

354

Another sequence worthy of inclusion in your book

5043 ✓ is the  $\delta$ -numbers mentioned by Riordan; 1, 0, 1, 1, 3, 6, 15, 36, 91, ... which also arise from random walks on the nonnegative integers where an object at  $k > 0$  can move to  $k-1, k, \text{ or } k+1$  while an object at 0 must move to 1,



i.e. →

1  
0 1  
1 1 1  
1 3 2 1  
3 6 6 3 1  
6 15 15 10 4 1  
...

Also as rooted <sup>planted</sup> trees with no vertex having only a single edge above it, these numbers again arise.

This handbook ~~has~~ been extremely helpful to me in my work. The writing is lucid, there are very few errors, and it's very intelligently ~~organ~~ organized.

I would like very much to receive whatever supplements are available.

Thank you,

Louis W. Shapiro

104 Lake ~~St~~ Ave

Newton, Mass. 02159



## Bell Laboratories

600 Mountain Avenue  
Murray Hill, New Jersey 07974  
Phone (201) 582-3000

September 7, 1976

Professor Louis W. Shapiro  
104 Lake Avenue  
Newton, Massachusetts 02159

Dear Professor Shapiro:

Thank you very much for your letter, and for the kind words, comments, and corrections to the book. They are all very much to the point and I shall attend to them in the next issue of the supplement. This is long overdue, Supplement I (enclosed) now being quite out of date.

Could you please drop me a postcard some time giving the page in Riordan where he discusses the  $\gamma$ -numbers (random walks on the nonnegative integers)?

Perhaps the enclosed may amuse you.

Thank you for writing: I am glad to hear the book has proved useful.

Yours sincerely,

MH-1216-NJAS-mv

N. J. A. Sloane

Enc.  
As above