Scan
J. Propp
Email
2 pages
From njas Mon Mar 28 23:49 EST 1994
To: njas, prop@math.mit.edu

Jim, back in 1991 you very kindly suggested, (among other things) the following:

[ with some comments, or rather requests!, from me in square brackets]

I think the sequence
1, 2, 4, 5, 10, 11, 13, 14,...

[ yes , it is there, sequence A3278]

should be included, with a reference to Erdős and Turán's
"On some sequences of Integers" (J. London Math. Soc. 11 (1936),
261-264) Y I also suggest the related sequences
0, 0, 1, 0, 0, 1, 1, 2, 0, 0, 1, 0, 0, 1, 1, 2, 1, 2, 2, 3, 3, 4, 3, 4, ...
1, 2, 4, 6, 8, 12, 14, ...
1, 2, 4, 7, 11, 17, 36, ...
studied by Joseph Gerver, Jamie Simpson, and myself in "Greedily
Partitioning the Natural Numbers into Sets Free of Arithmetic
Progressions" (Proc. AMS, 102 (1988), 765-772). All three can
be described as self-generating sequences; I can send you more
terms if you like.

[ no, i don't have these, and i would like to!

Can you send more terms? a copy of the paper?

They will be sequences A6997 - A6999 ]

I think sequence 37 should be labelled "representations as a sum
of "distinct" Fibonacci numbers"; representations as a sum of
(not necessarily distinct) Fibonacci numbers are enumerated by
the sequence
1, 2, 3, 3, 6, ..., [ I don't get this either way]

(not included in the first edition).

[ do you happen to have more terms of this one? sorry, but i have

a zillion of these sequences to extend and enter!

this one will be A7000 ]

The self-generating sequence
1, 2, 1, 2, 3, 1, 2, 1, 2, 3, 1, 2, 3, 4, ...

(not in the first edition) is related to the Catalan numbers as
1, 2, 1, 2, 2, 1, 2, 1, 2, 2, 1, 2, ...

(sequence 36) is related to the Fibonacci numbers; I think it
might be worth including.

[what is the defn? This will be A7001 ]

The new
Call it A7000
& More, please enter
See next page
The sequence $S(n)$ with terms given by
1, 2, 3, 6, 7, 8, 9, 12, 15, 18, ...
the unique sequence with the property that $S(1) = 1$ and $S(S(n)) = 3n$
for all $n$. (I published a problem on this in Crux Mathematicorum
a long time ago; unfortunately, I don't have the reference handy.)

Jim, I can't make any sense out of that one, which sounds
very intriguing. You can't mean $S(S(n)) = 3n$ ??

Best regards
Neil

I think he means

$$s(s(s(n))) = 3n$$

for $n \geq 4$

but it still
c's wrong

$S(3) = 36 - 2$