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J Propp

email

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A3278
→ A6997
– A7001
A3107

From njas Mon Mar 28 23:49 EST 1994
To: njas, propp@math.mit.edu
Status: RO

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 Erd\"os and Tur\'an's
"On some sequences of Integers" (J. London Math. Soc. 11 (1936),
261-264). I also suggest the related sequences
0,0,1,0,0,1,1,2,2,0,0,1,0,0,1,1,2,2,1,2,2,3,3,4,3,3,4,...
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.

← mira, get from library please

[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
1,2,3,3,6,9,... ← 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]

$\frac{1}{(1-x^1)(1-x^2)(1-x^3)\cdots}$ gives A3107

$\frac{1}{(1-x^1)^2(1-x^2)(1-x^3)(1-x^5)\cdots}$ gives 1, 2, 4, 7, 11, ... new, Call it A7000 & Mira, please enter

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
1,2,1,2,2,1,2,1,2,2,1,2,2,...
(sequence 36) is related to the Fibonacci numbers; I think it
might be worth including.

[what is the defn? This will be A7001]

– See next page

under

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 clear

I think he means
$S(S(S(n))) = 3n$
for $n \geq 4$
but it still
is crazy

$S(S(n)) = 6$

$S(S(n)) = 3n$

$S(S(n)) = 3n-2$