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Guy letter
87-02-04

2 pages

Many seqs

A5728

A5728
A978
A46066
A5235
A5165
A7489
A2407
A3215
A5169

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87-02-04

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Dear Neil,

          The enclosed has taken me to the Bible a number of times, resulting in various comments.

          1.   A glance through the "Cunningham Project" shows that seq.956 can be continued... 61,79,101,127,167,191,199,313,347,701,...   A978

          2.   You *may* want to include the "fortunate primes" in the next edition (see Example 11 in the enclosed):

(1) 3,5,7,13,23,17,19,23,37,61,67,61,71,47,107,59,61,109,89,103,79,...   A46066
                                                                          A5235

          3.   You don't have the odd numbers, 1,3,5,7,9,11,...

          4.   You don't have the alternating sums of factorials   A5165
(Example 7)   1,5,19,101,619,4421,35899,326981,...

          5.   Nor the sums of factorials 1,3,9,33,153,873,... (cf.seq.1133)
          have it +1   A7489
          6.   You don't have the sequence arising in Example 8 of the
enclosed. This is more respectable than it looks, being (1 less than?) $\Sigma \varphi$, the number of fractions in the Farey series of order n : 1,2,3,5,7,11,13,19,23,29, 33,43,47,59,65,73,81,97,103,121,129,141,151,173,181,201,213,231,243,271,279,309,...   5728

          7.   The cuban primes (your seq. 1828) are a subset of the "hex numbers" (Example 16) which you don't have: A2407
                                                                          A3215
1,7,19,37,61,91,127,169,217,271,331,397,469,547,631,721,817,919,...
These are also the first differences of the cubes.

          8.   You might want to include Example 33, the (abs. value of the) value of the n th derivative of x^x at $x = 1$, &/or their quotients by n. [See Ex.33 for first 18 values.] *Do they continue to be divisible by n?*

          9.   I think Propp's penny partitions (Ex 34) deserve an entry:

(1,1)1,2,3,5,9,15,26,45,78,135,234,406,704,1222,2120,3678,6368,... and also the

A5169

exponents in the product form of the generating function:

(1 0 1)1,2,3,5,8,13,21,35,55,93,149,248,403,6~~70~~,10~~82~~,... A5170, A226999

        10.   To go with seq. 93, you might like to put the coefficients in the expansion of the other side of Ramanujan's phoney identity, i.e. same as seq. 93, until ...23,26,31,35,41,46,54,60,69,78,89,... (Example 35) A3114

A607   11.   I seem to have listed rather a lot you haven't got, so, as a consolation prize, may I thank you as a valuable source by pointing out that in

Example	1	2	5	14 *	22	23	30-31	32
I used seq.	990	1080	427	925,260	386,387	314,315	206	207

All the best.

Richard

RKG;jw

Richard K. Guy.

encl: SLSN

* you _do_ have _that_ sequence!