

Neil Check N2621
 Otherwise finished "A48"

A6783
 A48
 A1156

38 Piggottshill Lane
 Harpenden Herts.
 16th March 1989

Dear Dr Sloane

I have the English edition of your book; and as I am an amateur with only the slightest knowledge of the literature, I am finding it very useful.

I am writing to take advantage of your kind offers on p.4 and p.5 to request the supplements that you mention. I am including some notes which I hope will interest you - though they may well already be covered by past supplements.

79 PARTITIONS INTO SQUARES The references have unfortunately been omitted from my copy of the book. The reason for my interest shows clearly below.

A1156

262 NECKLACES This sequence is incredibly close to as shown in the enclosed printout.

$$\left[\frac{2 \uparrow X}{2 * X} \right]$$

I feel it is likely that if 262 is difficult to calculate, the very small discrepancies may be error :- 1091 for 1092, and 7280 for 7281.

A48

244 PARTITIONS OF INTEGERS The idea of this sequence can be expanded to form a table of the partitions of powers; the partitions of squares into squares on the line below, and the partitions of cubes into cubes on the next line, and so on with 4th powers, 5th powers etc.

Of the many sequences which comprise this table only two appear in your book: 244 horizontally and 245 vertically. So, I conclude that the table is new. Here is a sample :-

0	1	2	3	4	5	6	7	8	9
1	1	2	3	5	7	11	15	22	30
1	1	2	4	8	19	43	98	220	504
1	1	2	5	17	62	258	1050	4365	18012
1	1	2	7	36	253	1886	14800	118238	955639
1	1	2	9	88	1104	15772	241582	3869852	--
1	1	2	13	218	5082	140549	4318937	--	--
1	1	2	19	550	24119	1311749	8215969d	--	--
1	1	2	27	1413	117016	12648913	--	--	--
1	1	2	40	3679	577219	--	--	--	--
1	1	2	59	9622	2881559	--	--	--	--

A41
 A37444

A27601

I have been using an empirical program that generates the complete set of partitions and counts them oh so slowly. I have no theory for developing better methods - the best I can say is that I have now some basic data on which to test them.

Yours Sincerely
 H. L. Fisher

Check 4262
6788

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T
F$="#####" : DEFDBL Y : REM 262, NECKLACE ? HLF, 16/3/89
OR X=1 TO 49 : Y=INT(INT(2^X+.5)/2/X) : PRINT USING F$;Y, : NEXT X

```

Ok
RUN

1	1	1	2	3
5	9	16	28	51
93	170	315	585	1092
2048	3855	7281	13797	26214
49932	95325	182361	349525	671088
1290555	2485513	4793490	9256395	17895698
34636832	67108864	130150528	252645136	490853408
954437184	1857283200	3616814592	7048151552	13743895552
26817355776	52357697536	102280151040	199911211008	390937477120
764877668352	1497207275520	2932031094784	5744387162112	

Ok

close to A48

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1LIST 2RUN 3LOAD" 4SAVE" 5CONT 6,"LPT1 7TRON 8TROFF 9KEY 0SCREEN

262 NECKLACES This sequence is interestingly close to 27 shows in the enclosed printout.

I feel it is likely that if 262 is difficult to calculate, the very small discrepancies may be error :- 1091 for 1092, and 7280 for 7281.

244 PARTITIONS OF INTEGERS The idea of this sequence can be expanded to form a table of the partitions of powers; the partitions of squares into squares on the line below, and the partitions of cubes into cubes on the next line, and so on with 4th powers, 5th powers etc.

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3	5	7	11	15	22	30	41
4	8	19	43	98	220	504	1155
5	17	62	258	1050	4365	18012	71400
6	36	253	1886	14800	118236	955639	5686800
7	98	1104	15772	241582	3869852	58341255	844673296
8	216	5082	140549	4318937	77926200	1418352960	26711462400
9	550	24119	1331749	82159694	1597378800	31135104000	598400000000
10	1413	117016	12648913	241596940	51120000000	1040000000000	21000000000000
11	3679	577219	577219	1418352960	31135104000	6400000000000	130000000000000
12	9622	2881959	2881959	598400000000	13000000000000	270000000000000	5500000000000000

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