scan

CL Mallows

& NJAS

Emails, May 1991

add to A6123 - 6129

3 pages

6123
-6129

CLM

f91

#254 This sequence is NOT what is described in the reference (AMM 75 80 68).
Maybe RLG can explain it. #425 is correct.

#468.5 1 2 4 10 26 75 215
Generalized Ballot (m=5) See #294 for m=2, #456 for m=3, #468 for m=4.
(Start with (1,2,...,m), add votes retaining strict inequalities)
(Also = # determinants in expansion of D^n(Hessian)) 6123

? ref? ask more terms?

~~#469 is also involutions in Sn.~~

~~#557 = (#464)/2~~

~~#566 Additional ref.~~ AMM 90 39 83 (called Markoff numbers)

~~#594 Additional ref. AMM 79 519 72~~

#594.5 1 2 5 17 79
Pair-necklaces 6124 ask! 6124

#602.5 ~~1 2 5 26~~
Tree problem See #240.5

#629 may be wrong. Not consistent with #464 or JCT 1968. Should perhaps = #630.

#746.5 1 2 8 64
Labelled graphs 2^(n choose 2) 6125

#773.5 1 2 9 114 6126
Hierarchical models with linear terms forced

#909.5 1 3 4 5 6 8 9 10 12 15 16 17 18 20 24
Constructible n-gons

#1007.5 1 3 6 11 20 37
n+2^n 6127

#1010.5 1 3 6 12 20 325 54 86 128 192
Sum{n{product from 1 to n(x/(1-x^i))}} ?? ask clm

~~#1106 = (#630)/2~~

~~#1184 Ref. Moser circa 1960? = Pn(3) (Legendre Poly.)~~

~~#1214 two more terms: 35169 272835 1438506~~
~~This is also Sum{multinomial(n over i,j,k)^2}~~

~~#1323 Ref. Math. Mag. 47 pp. 167&178, 1974~~

#1414.5 1 4 14 48 164 560
Time for coin-toss difference to escape from (-3,+3). 6128

#1500.5 1,0, 1 4 41 768 27469 ~~(actually precede this by 1,0)~~
Sum{c(j)(n choose j)} = 2^(n choose 2)
CLM 4/11/89

6129

~~#1585 also = 2^n-1-(n+1 choose 2)~~

~~#1598.5 1 5 19 85~~
~~Expand (1+x+x^2+..x^4)^n~~

~~#1611 also = 2^2n+1 - (2n+1 choose n)~~

~~#1942.5 1 8 84 992~~
~~Elliptic function amplitude in terms of the parameter. Abramowitz & Stegun 17.3.21~~

#2345.5 1 132 64988160 455760028510617600 ← ask CLM
Euler paths

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From:          Metzger <UD004872@VM1.NoDak.EDU>
Received: from NDSUVM1.BITNET by VM1.NoDak.EDU (IBM VM SMTP R1.2.1MX) with BSMTP id 4609
Received: from NDSUVM1 (UD004872) by NDSUVM1.BITNET (Mailer R2.07) with BSMTP
 id 8433; Tue, 30 Apr 91 09:16:01 CDT
Date:          Tue, 30 Apr 91 09:15:41 CDT
Organization: North Dakota Higher Education Computer Network
Subject:       Re: Integer Sequences, extensions and corrections
To:            Number Theory List <NMBRTHRY@NDSUVM1>,
               Neil Sloane <njas@research.att.com>
In-Reply-To:  Message of Mon, 29 Apr 91 13:09:37 -0400 from
 <njas@research.att.com>
Status: R
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There are three references to the game of MOUSETRAP that I find in your book. #1635, #1186 and #1423. All of these came from an article by Adolph Steen in Quarterly Journal of Pure and Applied Mathematics, Vol. 15, pp 230-241. You may have other references to sequences from that article, but I haven't bumped into them.

Sequence 1423 is correct. The other two ARE correctly copied from the article, but both are based on an error Steen made in one of his formulas. No doubt he would have discovered that if he had had a computer! In section six of his article he gives formula

a(n-1,x-1) = a(n-2,x-2) - a(n-3,x-2)

it should be

a(n-1,x-1) = a(n-1,x-2) - a(n-2,x-2).

This changes sequence # 1635 from: 1, 5, 31, 197, 1435, 11765, 107755
to: 1, 5, 31, 203, 1501, 12449, 114955

1186 from: 1, 3, 13, 65, 403, 2885, 23515, 214805
to: 1, 3, 13, 65, 397, 2819, 22831, 207605.

These corrections were found by Dan Mundfrom as part of an independent study at the Univ of North Dakota.

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From mipsmath.math.uqam.ca!plouffe Thu May  2 13:54:25 EDT 1991
Received: by gauss; Thu May  2 13:54:54 EDT 1991
Received: by inet.att.com; Thu May  2 13:54 EDT 1991
Received: by mipsmath (5.61/1.34)
   id AA06345; Thu, 2 May 91 13:54:25 -0400
From: plouffe@mipsmath.math.uqam.ca (Simon Plouffe)
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$$\sum a(j)\binom{n}{j} = 2^{\binom{n}{2}}$$

$$\boxed{a(n) = \sum_{k=0}^{n} (-1)^{k+n} \binom{n}{k} 2^{\binom{k}{2}}}$$

1									
1 1									
1 2 1		+1	-1	+2	$1-2+2=1$				
1 3 3 1	-1	+1	-2	8	$-1+3-6+8=4$				
1 4 6 4 1									

	0	1	2	3	4
$n=4$	+	−	+	−	+
	1	4	6	4	1
	1	1	2	8	64

$1-4+12-32+64$

$$\begin{array}{r} 77 \\ 36 \\ \hline 41 \end{array}$$