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Domb & Barrett

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then see how to include red sequences

$N1174 = A1764$
 $N1985.5 = 3408$
 $N1132.5 = 3409$
 $A127537$

to be pointed

faq

Discrete Math. 9(1974) 341-358 A108

C. Domb, A.J. Barrett, Enumeration of ladder graphs,

355

Table 2
Values of $c(N, k)$

N \ k	1	2	3	4	5	6	7	8	9	10
0	1									
1		1								
2			3							
3			12							
4			9	55						
5			2	66	273					
6			30	455	1428					
7			5	315	3060	7752				
8				105	2856	20349	43263			
9				14	1428	23940	134596	246675		
10					378	15960	191268	888030		
11					42	6300	159390	1480050		
12						1386	83490	1480050		
13						132	27324	965250		
14							5148	418275		
15							429	117117		
								19305		
								1430		

$\Delta A127537$

These should be called connected ladder graphs

$N1174$ ✓
 $New 3408 = N1985.5$ (SSC)

$New N1132.5 = 3409$ (SSC)
Catalan
A108

which is readily adaptable for use on a digital computer. We list in Table 2 values of $C(N, k)$ to $N = 10$, as these are useful in physical applications.

8.

Darboux's theorem may be used to obtain an asymptotic expression for $c_N(1)$, the total number of connected ladder graphs which may be drawn on N points. From (48),

(50) $C(x, 1) = [g(x) - xh^{1/2}(x)]^{1/3} + (x + \frac{1}{9}) [g(x) - xh^{1/2}(x)]^{-1/3} - \frac{1}{3}$,

where

$g(x) = -\frac{1}{27} - \frac{1}{2}x - x^2$, $h(x) = x^2 - \frac{1}{108}$.

In order to apply the technique of Darboux, it is necessary to know the singularities of $C(x, 1)$. $g - xh^{1/2}$ has no zeroes, so the singularities occur only when