

Wolfdieter Lang. Revisited Jul 31 2013 (row 10 added).
a(n,k) tabf head (staircase) for A111785

Partitions of n listed in Abramowitz-Stegun order p. 831-2 (see the main page for the ref.)

n\k	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	...
0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1	-1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2	-1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3	-1	5	-5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4	-1	6	3	-21	14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5	-1	7	7	-28	-28	84	-42	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6	-1	8	8	4	-36	-72	-12	120	180	-330	132	0	0	0	0	0	0	0	0	0	0	0	0
7	-1	9	9	9	-45	-90	-4	-45	165	495	165	-495	-990	1287	-429	0	0	0	0	0	0	0	0
8	-1	10	10	10	5	-55	-110	-110	-55	-55	220	660	330	660	55	-715	-2860	-1430	2002	5005	-5005	1430	
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n\k	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	...

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As row sequences for n=0..10:

- 0. [1]
- 1. [-1]
- 2. [-1,2]
- 3. [-1,5,-5]
- 4. [-1,6,3,-21,14]
- 5. [-1,7,7,-28,-28,84,-42]
- 6. [-1,8,8,4,-36,-72,-12,120,180,-330,132]
- 7. [-1,9,9,9,-45,-90,-45,-45,165,495,165,-495,-990,1287,-429]
- 8. [-1,10,10,10,5,-55,-110,-110,-55,-55,220,660,330,660,55,-715,-2860,-1430,2002,5005,-5005,1430]
- 9. [-1,11,11,11,11,-66,-132,-132,-66,-66,-132,-22,286,858,858,858,858,286,-1001,-4004,-2002,-6006,-1001,3003,15015,10010,-8008,-24024,19448,-4862]
- 10. [1, 12, 12, 12, 12, 6, -78, -156, -156, -156, -78, -156, -78, -78, 364, 1092, 1092, 546, 1092, 2184, 364, 364, 546, -1365, -5460, -5460, -8190, -8190, -5460, -273, 4368, 21840, 10920, 43680, 10920, -12376, -74256, -61880, 31824, 111384, -75582, 16796]

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The row sums are : $(-1)^n$, $n=0..9$.

The unsigned row sums are : $A001003(n+1)$, $n=0..9$ ('little' Schroeder numbers).

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Note added (Jan 30 2007):

See the MathWorld entry "Series reversion", formula (11) (Morse-Feshbach). This translates into the following formula for the entries of row n pertaining to the partitions of n with m parts

(in Abramowitz-Stegun order):

$List(n,m) := [seq((-1)^m * risefac(n+1,m) / ((n+1) * product(e(m,k,j)!, j=1..n)), k=1..p(n,m))]$

with $p(n,m)$ the number of m part partitions of n (see $A008284(n,m)$), $risefac(n,m) := n*(n+1)*...*(n+(m-1))$

(rising factorials), $e(m,k,j)$ the exponent of j in the k -th partition of n with m parts

(in Abramowitz-Stegun order).

The list of list of all row n entries belonging to partitions of n with m parts is then:

$List(n) := [seq(List(n,m), m=1..n)]$.

For example:

$n=5$, $m=3$, produces $List(5,3) = [-28, -28]$ corresponding to the partitions $[(1^2,3), (1,2^2)]$.

$List(5) = [[-1], [7, 7], [-28, -28], [84], [-42]]$.

e.o.f