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A134832

a(n,k)=C(n,k) tabl head (triangle) for A134832 (nr. of circular permutations of {1,2,...,n} with exactly k successor pairs (i,i+1)).
Note that due to cyclicity also (n,1) is a successor pair.

n\k	0	1	2	3	4	5	6	7	8	9 ...
0	1	0	0	0	0	0	0	0	0	0
1	0	1	0	0	0	0	0	0	0	0
2	0	0	1	0	0	0	0	0	0	0
3	1	0	0	1	0	0	0	0	0	0
4	1	4	0	0	1	0	0	0	0	0
5	8	5	10	0	0	1	0	0	0	0
6	36	48	15	20	0	0	1	0	0	0
7	229	252	168	35	35	0	0	1	0	0
8	1625	1832	1008	448	70	56	0	0	1	0
9	13208	14625	8244	3024	1008	126	84	0	0	1
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First (k=0) column: A000757= [1,0,0,1,1,8,36,229,1625,13208,120288,1214673,13469897,...], circular permutations without any successor pair.

Row sums give (n-1)! = A000142(n-1), n>=1.

Alternating row sums give: A134833 = [1,-1,1,0,-2,12,-16,144,368,4768,...].

Because C(n,k)=binomial(n,k)*C(n-k,0), k>=1, this is a Sheffer triangle of the Appell type:
((1-ln(1-x))/e^x,x). See the e.g.f. of the first column (k=0) sequence A000757.
I.e. the e.g.f. for column nr. k is ((1-ln(1-x))/e^x)*(x^k)/k!, k>=0, hence
a(n,k)=binomial(n,k)*a(n-k,0), n>=0.

The a-sequence for Appel type Sheffer triangles has always (e.)g.f 1.
The z-sequence for such triangles is always (1+1/g(x))/x if g is the e.g.f. of the first (k=0) column.

###################################### e.o.f. ##