Wolfdieter Lang, Jun 02 2012
A212355 tabf array: coefficients of the cycle index polynomials for the dihedral group D_n multiplied by 2n. The order of the partitions of n is like in Abramowitz-Stegun, pp. 831-2 (used by C. F. Hindenburg in 1779, see a comment on A036036)

k n	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**	**..**
1	2																						
2	2	2																					
3	2	3	1																				
4	2	0	3	2	1																		
5	4	0	0	0	5	0	1																
6	2	0	0	2	0	0	4	0	3	0	1												
7	6	0	0	0	0	0	0	0	0	0	7	0	0	0	1								
8	4	0	0	0	2	0	0	0	0	0	0	0	0	0	5	0	0	4	0	0	0	1	
..																							

The row length is given by A000041(n) = [1,2,3,5,7,11,15,22,...].
The sequence of one half of the row sums is A000027(n)= [1,2,3,4,...].
The number of non vanishing elements in row no. n is A212356(n) = [1,2,3,4,3,5,3,5,...]

The cycle index polynomials for D_n are, for n=1..15:

n=1: x[1]

n=2: (x[1]^2 + x[2])/2

n=3: (2*x[3] + 3*x[1]*x[2] + x[1]^3)/6

n=4: (2*x[4] + 3*x[2]^2 + 2*x[1]^2*x[2] + x[1]^4)/8

n=5: (4*x[5] + 5*x[1]*x[2]^2 + x[1]^5)/10

n=6: (2*x[6] + 2*x[3]^2 + 4*x[2]^3 + 3*x[1]^2*x[2]^2 + x[1]^6)/12

n=7: (6*x[7] + 7*x[1]*x[2]^3 + x[1]^7)/14

n=8: (4*x[8] + 2*x[4]^2 + 5*x[2]^4 + 4*x[1]^2*x[2]^3 + x[1]^8)/16

n=9: (6*x[9] + 2*x[3]^3 + 9*x[1]*x[2]^4 + x[1]^9)/18

n=10: (4*x[10] + 4*x[5]^2 + 6*x[2]^5 + 5*x[1]^2*x[2]^4 + x[1]^10)/20

n=11: (10*x[11] + 11*x[1]*x[2]^5 + x[1]^11)/22

n=12: (4*x[12] + 2*x[6]^2 + 2*x[4]^3 + 2*x[3]^4 + 7*x[2]^6 + 6*x[1]^2*x[2]^5 + x[1]^12)/24

n=13: (12*x[13] + 13*x[1]*x[2]^6 + x[1]^13)/26

n=14: (6*x[14] + 6*x[7]^2 + 8*x[2]^7 + 7*x[1]^2*x[2]^6 + x[1]^14)/28

n=15: (8*x[15] + 4*x[5]^3 + 2*x[3]^5 + 15*x[1]*x[2]^7 + x[1]^15)/30