

# Triangle in A317051

$k$	0	1	2	3	4	5	6	7	...
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$n$	Row Sum
	$\sigma_n$
0	1
1	1
2	10
3	19
4	109
5	280
6	1261
7	3781
8	15130
9	49159
10	185329
11	627760
12	2295721
13	7945561
14	28607050

1									
1									
1	9								
1	18								
1	27	81							
1	36	243							
1	45	486	729						
1	54	810	2916						
1	63	1215	7290	6561					
1	72	1701	14580	32805					
1	81	2268	25515	98415	59049				
1	90	2916	40824	229635	354294				
1	99	3645	61236	459270	1240029	531441			
1	108	4455	87480	826686	3306744	3720087			
1	117	5346	120285	1377810	7440174	14880348	4782969		

⋮

The row sums give A015445 (Generalized Fibonacci numbers), and the limit of their ratio is

$$\lim_{n \rightarrow \infty} \left( \frac{\sigma_n}{\sigma_{n-1}} \right) \rightarrow 3.5413812651491\dots$$

**REFERENCE:**

Shara Lalo and Zagros Lalo, Polynomial Expansion Theorems and Number Triangles, Zana Publishing, 2018, ISBN: 978-1-9995914-0-3