

Triangle in A305837

k	0	1	2	3	4	5	6	7	...
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n	Row Sum
	σ_n
0	1
1	5
2	26
3	135
4	701
5	3640
6	18901
7	98145
8	509626
9	2646275
10	13741001
11	71351280
12	370497401
13	1923838285
14	9989688826
15	51872282415

1									
5									
25	1								
125	10								
625	75	1							
3125	500	15							
15625	3125	150	1						
78125	18750	1250	20						
390625	109375	9375	250	1					
1953125	625000	65625	2500	25					
9765625	3515625	437500	21875	375	1				
48828125	19531250	2812500	175000	4375	30				
244140625	107421875	17578125	1312500	43750	525	1			
1220703125	585937500	107421875	9375000	393750	7000	35			
6103515625	3173828125	644531250	64453125	3281250	78750	700	1		
30517578125	17089843750	3808593750	429687500	25781250	787500	10500	40		

⋮

The sequence generated by the row sums is [A052918](#) and the limit of their ratio is a Metallic mean.

$$\lim_{n \rightarrow \infty} \left(\frac{\sigma_n}{\sigma_{n-1}} \right) \rightarrow 5.1925824035 \dots$$

Reference:

Shara Lalo and Zagros Lalo, Polynomial Expansion Theorems and Number Triangles, Zana Publishing, 2018, ISBN: 978-1-9995914-0-3, pp. 382.