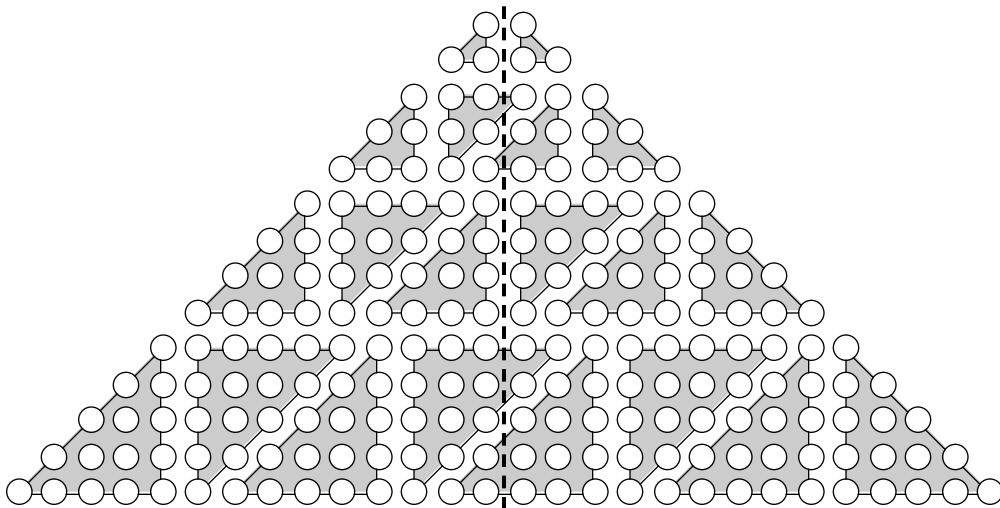


Proof Without Words: A Weighted Sum of Triangular Numbers

$$T_n = 1 + 2 + 3 + \cdots + n, \quad n \geq 1 \Rightarrow$$

$$\sum_{k=1}^n kT_{k+1} = T_{n+1-1}.$$

E.g., $n = 4$:



$$2[T_2 + 2T_3 + 3T_4 + 4T_5] = 2T_{14} = 2T_{5-1}.$$

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