

# Proof Without Words: Fibonacci Triangles and Trapezoids

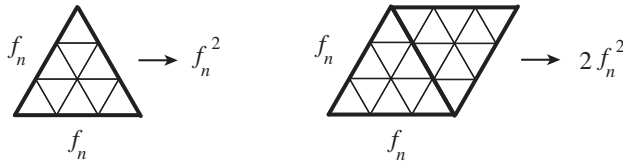
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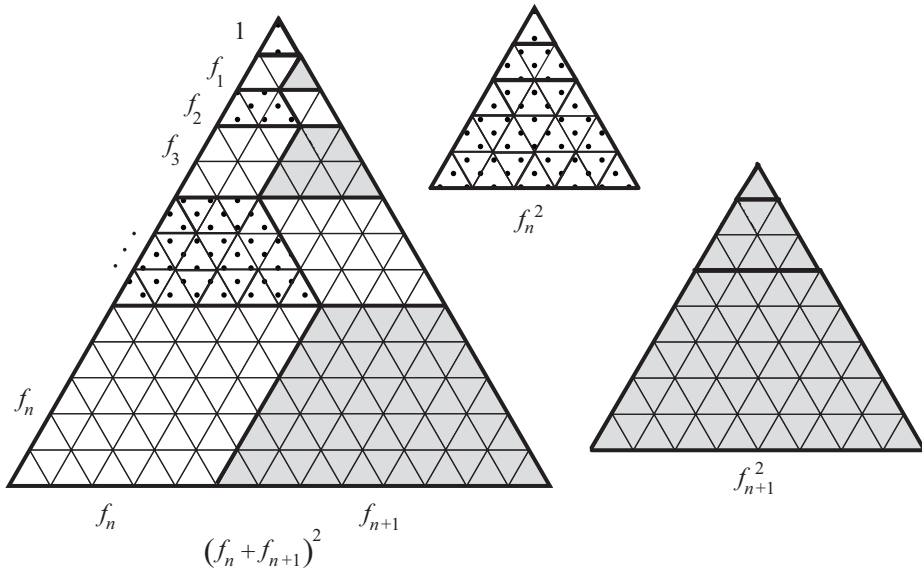
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## I. Counting triangles:



II. Identity: 
$$\sum_{k=1}^n 2f_k^2 + f_n^2 + f_{n+1}^2 = (f_n + f_{n+1})^2.$$



The identity proved here reduces algebraically to  $\sum_{k=1}^n f_k^2 = f_n f_{n+1}$ . This proof uses almost the same diagram as [1] to prove a different identity.

## REFERENCE

1. Hans R. Walser, Proof Without Words: Fibonacci Trapezoids, *Math. Mag.* **84** (2011) 295. <http://dx.doi.org/10.4169/math.mag.84.4.295>