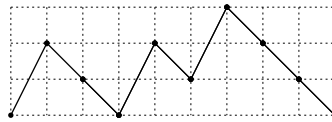


Generalized continued fractions, such as $F(x) =$

$$1 - \frac{1}{w_0 x + \frac{1}{(1 - \frac{w_1 x}{(\dots)(\dots)}) (1 - \frac{w_2 x}{(\dots)(\dots)}) (1 - \frac{w_3 x}{(\dots)(\dots)}) (1 - \frac{w_4 x}{(\dots)(\dots)})}},$$

are generating functions of weighted Łukasiewicz paths, like the path below.



In general, Łukasiewicz paths start and end at height 0, never go below the initial height; the up steps can be arbitrarily large, but the down steps always reduce the height by 1.

The Łukasiewicz paths can encode partitions, permutations, n -ary trees, and more. We will present the encodings, which let us write the ordinary generating function of the encoded objects as a generalized continued fraction.