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880 - Cantor Fractions

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Cantor Fractions

Background

In the late XIXth century the German mathematician George Cantor argued that the set of positive fractions Q^+ is equipotent to the set of positive integers N, meaning that they are both infinite, but of the same class. To justify this, he exhibited a mapping from N to Q^+ that is onto. This mapping is just *traversal* of the $N \times N$ plane that covers all the pairs:
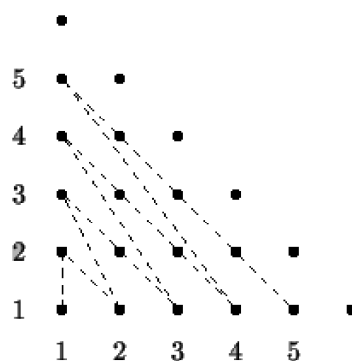
The first fractions in the Cantor mapping are:

$$\frac{1}{1}, \frac{2}{1}, \frac{1}{2}, \frac{3}{1}, \frac{2}{2}, \frac{1}{3}, \ldots$$

Problem

Write a program that finds the *i*-th Cantor fraction following the mapping outlined above.

Input