



5: Room Reforms

Level: Easy

Time limit: 1 second

Since the current board of **via** introduced open committee meetings, the activity in the committees has increased. The new candidate board saw this, and decided that to keep track of them all, they're going to ask the universities to reserve rooms for each committee. There are n of them, and also n rooms for each of which exactly one committee is allowed to meet in. Unfortunately, the candidate board still has much to learn, and so a miscommunication between them and the university occurred. Instead of n equally sized rooms, the association has been given rooms with capacities 1 through n .

To make matters a little more confusing, for bureaucratic reasons (leave this to the candidate board to figure out) a committee may have 0 members currently, but must still be able to get a room assigned to it for potential future members.

Please help the committees distribute the rooms among themselves. Your goal is to assign one committee to each room, and maximize the fraction of room that is filled overall.

Input

The input consists of one line with an integer n ($1 \leq n \leq 200.000$), the number of committees, and one line with n space separated integers s ($0 \leq s \leq n$), the sizes of the committees.

Output

Output the lowest fill-fraction of all the rooms in an optimal arrangement. If every possible room assignment has at least one fraction higher than 1, this means that someone will have to wait outside and you will not hear the end of this from the committee in question. In this case, print "impossible". An error may be at most 10^{-6} .

Sample input 1

8
1 2 3 4 5 6 7 7

Sample input 2

8
1 2 3 4 5 6 8 8

Sample output 1

0.875

Sample output 2

impossible