Problem D
Double Sort
Time Limit: 1 Second(s)

Given two integers n and m ($n \leq m$), you generate a sequence of n integers as follows:

1. First, choose n distinct integers between 1 and m, inclusive.
2. Sort these numbers in non-decreasing order.
3. Take the difference sequence, which transforms a sequence a_1, a_2, a_3, ... into a_1, $a_2 - a_1$, $a_3 - a_2$, ...
4. Sort the difference sequence in non-decreasing order.
5. Take the prefix sums of the sorted difference sequence to get the final sequence. This transforms a sequence b_1, b_2, b_3, ... into b_1, $b_2 + b_1$, $b_3 + b_2 + b_1$, ...

For example, with $n = 3$ and $m = 10$:

1. Suppose we initially chose 6, 2, 9.
2. The sequence in order is 2, 6, 9.
3. The difference sequence is 2, 4, 3.
4. The sorted difference sequence is 2, 3, 4.
5. The prefix sums of the sorted difference sequence are 2, 5, 9.

Suppose you chose a uniformly random set of distinct integers for step 1. Compute the expected value for each index in the final sequence.

Input

The single line of input contains two integers n ($1 \leq n \leq 50$) and m ($n \leq m \leq 10{,}000$), where n is the size of the sequence, and all of the initial integers chosen are in the range from 1 to m.

Output

Output n lines. Each line contains a single real number, which is the expected value at that index of the final sequence. Each answer is accepted with absolute or relative error at most 10^{-6}.

Sample Input 1	Sample Output 1
3 5	1 2.3 4.5