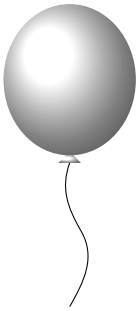
C N



Time limit: 1.0s
Memory limit: 256MB

Given an array of circles in a 2D plane between points $(0, 0)$ and (N, N), count the expected number of circles containing a random point I chosen on this plane.

Input

The first line contains two integers N and M ($1 \leq N \leq 10^9, 1 \leq M \leq 10^5$) the plane's size, and the number of circles.

Second line contains M integers ($1 \leq 2 * r_i \leq N$) such that r_i is the radius of the circle i.

It's guaranteed that all circles lie inside the plane.

Output

Print the answer required above.

Samples

Sample input 1	Sample output 1
5 1 2	0.502655