

PROBLEMS

SUBMIT

STATUS

STANDINGS

CUSTOM TEST

C. NN and the Optical Illusion

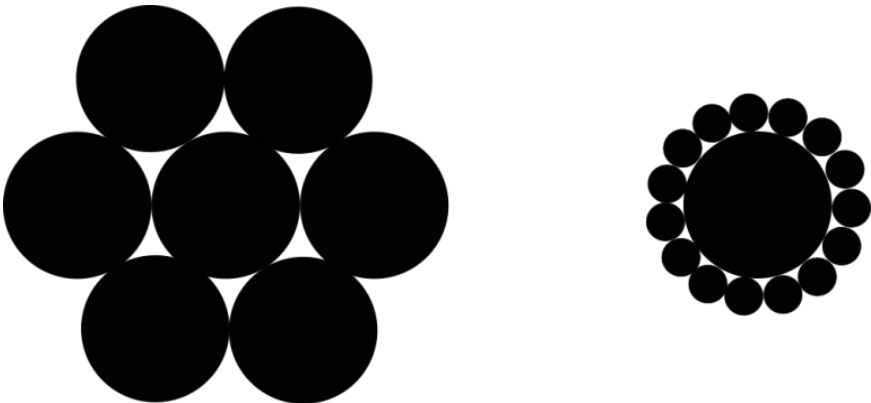
time limit per test: 2 seconds

memory limit per test: 256 megabytes

input: standard input

output: standard output

NN is an experienced internet user and that means he spends a lot of time on the social media. Once he found the following image on the Net, which asked him to compare the sizes of inner circles:



It turned out that the circles are equal. NN was very surprised by this fact, so he decided to create a similar picture himself.

He managed to calculate the number of outer circles n and the radius of the inner circle r . NN thinks that, using this information, you can exactly determine the radius of the outer circles R so that the inner circle touches all of the outer ones externally and each pair of neighboring outer circles also touches each other. While NN tried very hard to guess the required radius, he didn't manage to do that.

Help NN find the required radius for building the required picture.

Input

The first and the only line of the input file contains two numbers n and r ($3 \leq n \leq 100$, $1 \leq r \leq 100$) — the number of the outer circles and the radius of the inner circle respectively.

Output

Output a single number R — the radius of the outer circle required for building the required picture.

Your answer will be accepted if its relative or absolute error does not exceed 10^{-6} .

Formally, if your answer is a and the jury's answer is b . Your answer is accepted if and only when $\frac{|a-b|}{\max(1,|b|)} \leq 10^{-6}$.

Examples

input	Copy
3 1	
output	Copy
6.4641016	

input	Copy
6 1	
output	Copy
1.0000000	

Codeforces Round #532 (Div. 2)

Finished

→ Virtual participation

Virtual contest is a way to take part in past contest, as close as possible to participation on time. It is supported only ACM-ICPC mode for virtual contests. If you've seen these problems, a virtual contest is not for you - solve these problems in the archive. If you just want to solve some problem from a contest, a virtual contest is not for you - solve this problem in the archive. Never use someone else's code, read the tutorials or communicate with other person during a virtual contest.

Start virtual contest

→ Problem tags

binary search

geometry

math

*1300

No tag edit access

→ Contest materials

- Announcement #1 (en) ×
- Announcement #2 (ru) ×
- Tutorial #1 (en) ×
- Tutorial #2 (ru) ×
- Tutorial #3 (en) ×

**input**

Copy

100 100

output

Copy

3.2429391

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