# 10283   The Kissing Circles

There are some interesting figures below. You can see that we can put within a circle one or more circles of equal radius. The important property of these circles is that every consecutive circles touch each other. Given the radius $R$ of the larger circle and the number of small circles $N$ of equal radius inside, you will have to find the radius of the smaller circles $r$, the area surrounded by the kissing small circles (light blue) $I$ and the area outside the kissing small circles but inside the larger circle (light green) $E$.
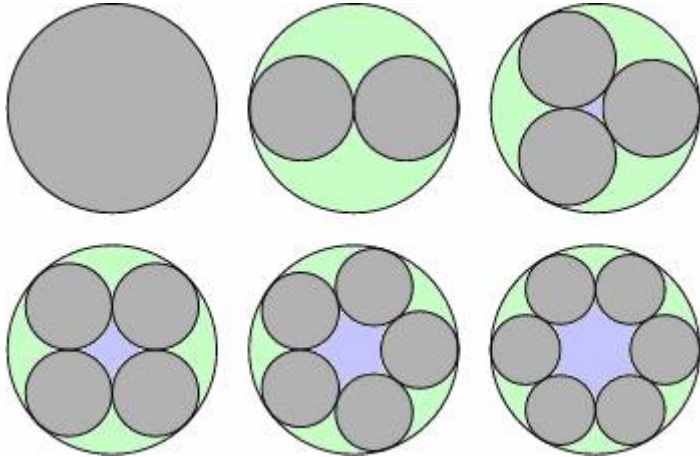


Figures for $N = 1, 2, 3, 4, 5, 6$

## Input

The input file will contain several lines of inputs. Each line contains non-negative integers $R$ ($R \leq 10000$) and $N$ ($1 \leq N \leq 100$) as described before. Input is terminated by end of file.

## Output

For each line of input produce one line of output. This one line contains three floating point numbers $r$, $I$ and $E$ as described before. The floating point numbers should have ten digits after the decimal point. The output will be checked with special correction programs. So you wont have to worry about small precision errors.

## Sample Input

```
10 3
10 4
10 5
10 6
```

## Sample Output

```
4.6410161514 3.4732652470 107.6854162259
4.1421356237 14.7279416563 83.8264899217
3.7019190816 29.7315551092 69.1625632742
3.3333333333 45.6568837582 59.0628713615
```