

Herman

Problem ID: herman
CPU Time limit: 1 second
Memory limit: 1024 MB
Difficulty: 1.4

The 19th century German mathematician Hermann Minkowski investigated a non-Euclidian geometry, called the taxicab geometry. In taxicab geometry the distance between two points $T_1(x_1, y_1)$ and $T_2(x_2, y_2)$ is defined as:

$$D(T_1, T_2) = |x_1 - x_2| + |y_1 - y_2|$$

All other definitions are the same as in Euclidian geometry, including that of a circle:

A **circle** is the set of all points in a plane at a fixed distance (the radius) from a fixed point (the centre of the circle).

We are interested in the difference of the areas of two circles with radius R , one of which is in normal (Euclidian) geometry, and the other in taxicab geometry. The burden of solving this difficult problem has fallen onto you.

Source: Croatian Open Competition in Informatics 2006/2007, contest #1
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Input

The first and only line of input will contain the radius R , a positive integer smaller than or equal to 10 000.

Output

On the first line you should output the area of a circle with radius R in normal (Euclidian) geometry. On the second line you should output the area of a circle with radius R in taxicab geometry.

Note: Outputs within ± 0.0001 of the official solution will be accepted.

Sample Input 1

1

Sample Output 1

3.141593
2.000000

Sample Input 2

21

Sample Output 2

1385.442360
882.000000

Sample Input 3

42

Sample Output 3

5541.769441
3528.000000