

COCI '06 Contest 1 #2 Herman

Time limit: 1.0s **Memory limit:** 32M

The 19th century German mathematician Hermann Minkowski investigated a non-Euclidean 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 Euclidean 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 (Euclidean) geometry, and the other in taxicab geometry. The burden of solving this difficult problem has fallen onto you.

Input Specification

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

Output Specification

On the first line you should output the area of a circle with radius R in normal (Euclidean) 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