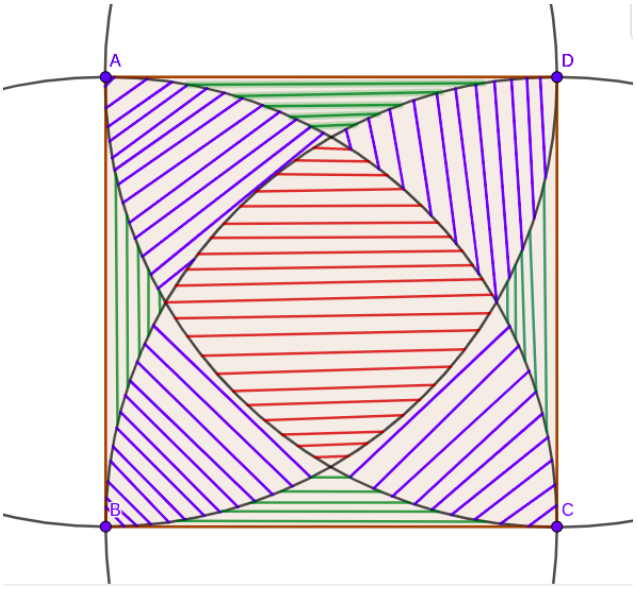
Problem I. Primary school geometry

Input file:	standard input
Output file:	standard output
Time limit:	1 second

Given a square $ABCD$ where $AB = x$ and each vertex of the square is the center of a circle of radius x. You are to calculate the quantities A, B and C such that:

- A is the intersection area of the square $ABCD$ with the surface where exactly four circles overlap (the area of the region striped in red)
- B is the total intersection area of the square $ABCD$ with the surface where exactly three circles overlap (the total area of the region striped in blue)
- C is the total intersection area of the square $ABCD$ with the surface where exactly two circles overlap (the total area of the region striped in green)



Input

The only line in the input contains a single real number x ($0 \le x \le 10^6$) — the side length of the square.

Output

in a single line output three real numbers A, B and C in this order. The answer will be considered correct if the relative or absolute error of each number doesn't exceed 10^{-9}.

Example

Standard input
0.1
Standard output
0.0031514675302 0.00511299181572 0.0017355409521

Standard input
0.2
Standard output
0.0126058701208 0.0204519672629 0.00694216380841

Standard input
0.3
Standard output
0.0283632091806 0.0460169286272 0.0156198693448