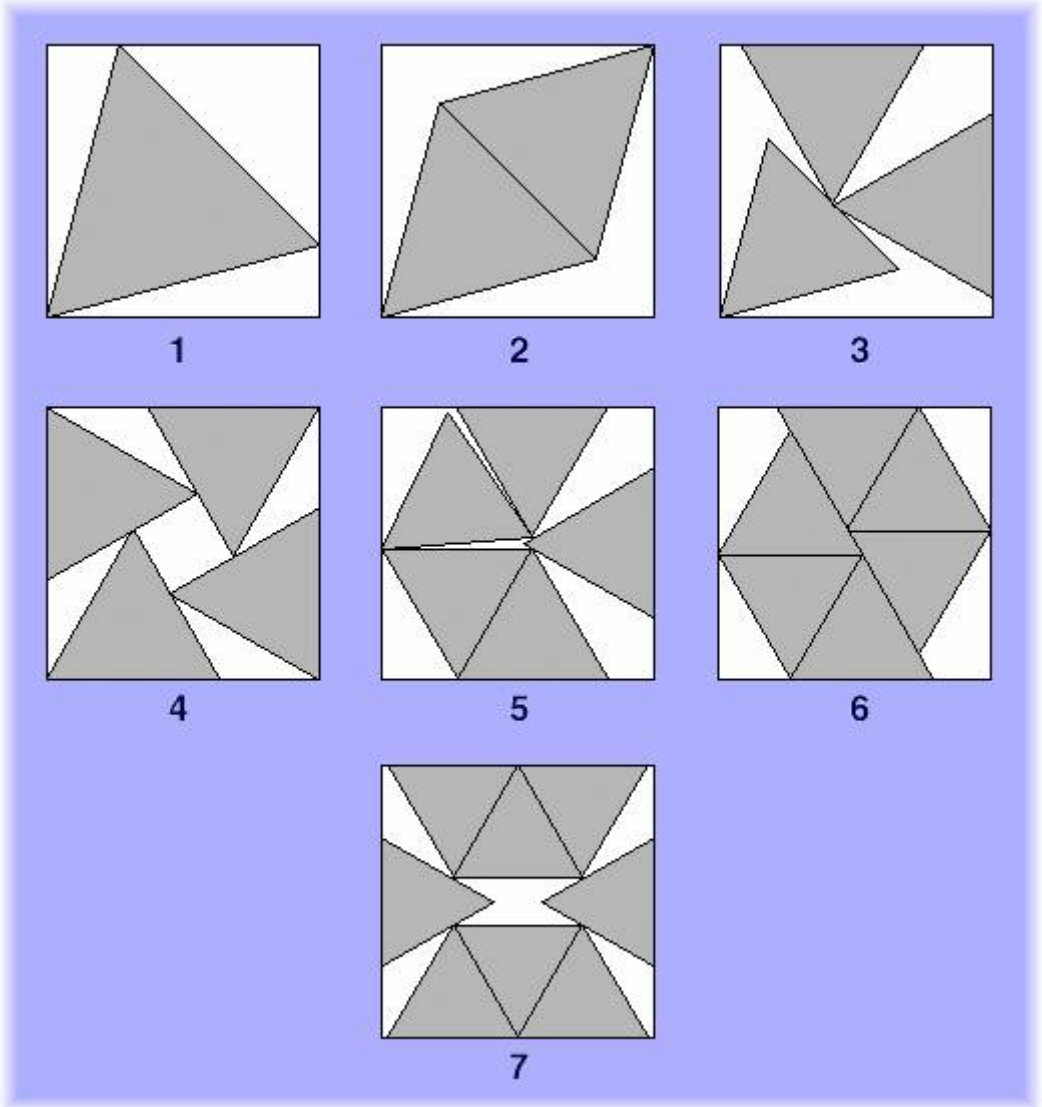
Problem G

A Square & Equilateral Triangles

Input: standard input
Output: standard output
Time Limit: 3 seconds
Memory Limit: 32 MB

The figure **1, 2, 3, 4, 5, 6** and **7** shows how **1, 2, 3, 4, 5, 6** and **8** triangles of equal size can be put int a square optimally. Obviously, if the square size remains same the triangle sizes will be decreasing from figure **1** to **7**. Given the square size you will have to find out the sides of the triangles for all seven figures. You can assume that when the images look exactly symmetric along a certain axis they are actually symmetric along that certain axis. Also note that I am asking you to print the decimal value of the exact solution and not any approximate solution.



Input

The input file contains several lines of input. Each line contains a single floating point number **S (0<=S<=10000)** which denotes the side of a square. Input is terminated by end of file.

Output

For each line of input produce one line of output. Each line will contain seven floating point numbers **t1, t2, t3, t4, t5, t6** and **t7**. Here **t1, t2, t3, t4, t5, t6** and **t7** denote the length of the side of a triangle for the given input in case **1, 2, 3, 4, 5, 6,** and **7** respectively. All floating point numbers should have ten digits after the decimal point. The output will be checked with special correction program. So small precision errors will be ignored.

Sample Input:

```
0.0000001
0.0000002
0.0000003
```

Sample Output:

```
0.0000001035 0.0000000816 0.0000000676 0.0000000634 0.0000000554 0.0000000526 0.0000000477
0.0000002071 0.0000001633 0.0000001353 0.0000001268 0.0000001109 0.0000001052 0.0000000953
0.0000003106 0.0000002449 0.0000002029 0.0000001902 0.0000001663 0.0000001577 0.0000001430
```

(Math Lovers' Contest, Problem setter: Shahriar Manzoor, Thanks to Dr. Erich Friedman)