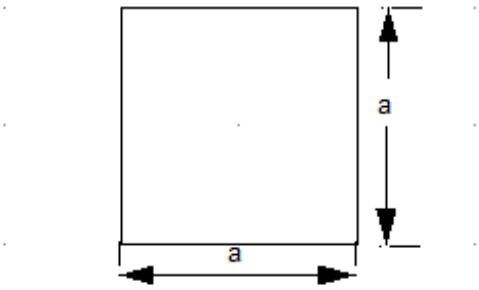
Geometric square



Enter the edge of the square. Calculate the *perimeter* and *area* of the square.

Input

The first line of the input consist of a single integer number *t* which determines the number of tests.

In each of next *t* lines will contain the value of square's edge.

Constraints

- 0 < t ≤ 1 000

Output

For each test case print out *perimeter* and *area* that separated by a space. Separate your answers with a new line character.

Example

Input:
7
0
1
-2
3
12
-3
20

Output:
the length of square's edge must be greater than 0
4 1
the length of square's edge must be greater than 0
12 9
48 144
the length of square's edge must be greater than 0
80 400